

# COMPULIT



***NATIONAL TECHNICAL SCHOOLS***







## INTRODUCTION TO COMPULIT

*"The uses for computers are expanding at a very rapid rate. Virtually every business, government agency, public agency such as hospitals, and an increasingly greater number of homes all have computers. Indeed it has been predicted by some experts that by the year 1995 as many as 100 million computer could be in use.... Their increased use and influence will affect every person in the world."*

## WHY TAKE A COMPUTER COURSE?

THIS COURSE IS FOR YOU IF:

- You currently use computers in your job and would like to gain additional knowledge and/or skills.

OR

- You expect to use computers in your job in the near future, and you would like to get a head start on how to use them.

OR

- You would like to change your job; and knowing how to use computers would help you get a better job.

OR

- You would like to start a new career in the computer industry.

OR

- You would like to become "computer literate".

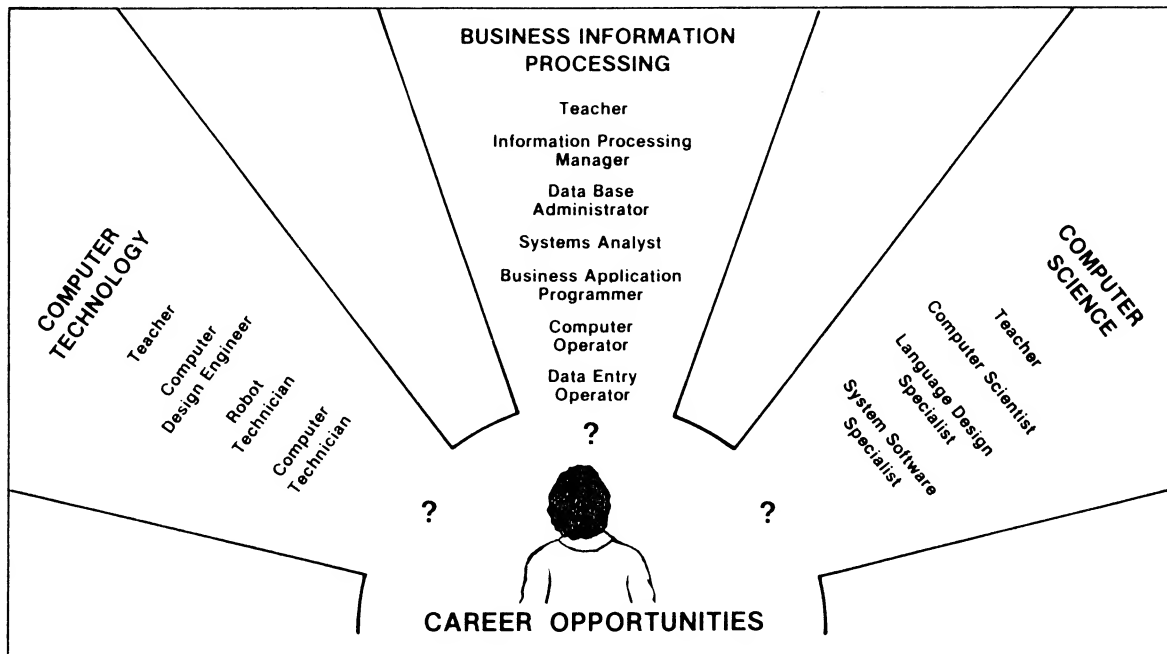




## INTRODUCTION TO COMPULIT

### WHY TAKE A COMPUTER COURSE?

*"The information processing industry has emerged as one of the world's largest industries, with sales of computer hardware and software, and services exceeding \$100 billion annually. The growth in this industry has resulted in numerous job opportunities in many different categories with varying educational requirements."*





## INTRODUCTION TO COMPULIT

### WHY COMPULIT IS UNIQUE?

What makes NTS COMPULIT unique is that you receive:

- YOUR OWN COMPUTER AND PRINTER so that you can continue your progress even after the course is completed.
- SEVERAL BEST SELLING SOFTWARE PACKAGES, again so that you can continue developing your skills both during and after this course.
- HANDS-ON PRACTICE with 5 leading software applications:
  - DOS (Disk Operating System)
  - WordStar (word processing)
  - Supercalc3 (electronic spreadsheet)
  - Dbase III (database)
  - BASIC (programming language)
- a TELEPHONE HOTLINE NUMBER where you can get help in setting up and operating your computer system.
- a STUDY GUIDE with step-by-step instructions on how to complete each unit in the course.



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## INTRODUCTION TO COMPULIT

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### WHAT THIS STUDY GUIDE HAS TO OFFER

What makes this study guide unique is that it:

- divides textbook chapters into smaller pieces so you have a chance to practice what you are learning.
- presents objectives that tell you what knowledge/skills will be gained/performed during each lesson.
- presents key concepts in the order of appearance in the readings.
- provides practice tests.
- provides answers to practice tests and remediation.
- mixes textbook reading material with textbook hands-on activities.
- provides step-by-step instructions on:
  - how to complete each lesson.
  - how to set up your computer.
  - how to use DOS (Disk Operating System - Unit 14)
  - how to use BASIC (Units 23-24)



## INTRODUCTION TO COMPULIT

### WHAT COMES IN YOUR COMPULIT PACKAGE

#### Volume 1

Table of Contents

Study Guide- (Units 1 thru 13)

Textbook (Chapters 1 thru 18)

#### Volume 2

Study Guide- (Units 14 thru 25)

Textbook (Appendices A to C)

Computer

Printer

Software

MS-DOS

GW BASIC

Educational Versions of:

WordStar

SuperCalc3

dBASE III



## INTRODUCTION TO COMPULIT

### HOW THIS STUDY GUIDE IS ORGANIZED

This guide is divided into **25 UNITS**.

- UNIT 1: Introduction to Computing
- UNIT 2: History of Computing, Part 1
- UNIT 3: History of Computing, Part 2
- UNIT 4: Processing Data on the Computer
- UNIT 5: Interactive and Batch Processing
- UNIT 6: Input to the Computer
- UNIT 7: Output from the Computer
- UNIT 8: Users and Information Systems
- UNIT 9: Processor Unit and Data Representation
- UNIT 10: Auxiliary Storage
- UNIT 11: Careers and the Computer Industry
- UNIT 12: Data Communication
- UNIT 13: Operating Systems and Systems Software
- UNIT 14: Introduction to DOS
- UNIT 15: Application Software: Introduction to Wordprocessing
- UNIT 16: Using WordStar
- UNIT 17: Application Software: Electronic Spreadsheets
- UNIT 18: Using SuperCalc3
- UNIT 19: File Organization and Data Base
- UNIT 20: Using dBASE III
- UNIT 21: Programming Languages
- UNIT 22: Programming with Basic, Part 1
- UNIT 23: Programming with Basic, Part 2
- UNIT 24: Systems Analysis and Design
- UNIT 25: Computers in our Society

## INTRODUCTION TO COMPULIT

### HOW THIS STUDY GUIDE IS ORGANIZED (continued)

Each unit is made up on one or more **LESSONS**.

Each lesson is organized into several types of information:

- OBJECTIVES
- HOW TO COMPLETE THIS LESSON
- KEY CONCEPTS
- PRACTICE TEST
- ANSWERS TO PRACTICE TEST

Some lessons will contain

- HANDS-ON INSTRUCTIONS
- TROUBLESHOOTING
- COMMAND SUMMARIES

VII

A UNIT QUESTIONNAIRE follows the lessons and completes the unit.

You should complete at least one unit per week.

### STUDY TIPS

Here are a few tips that may help you in this course:

- Throughout the textbook, bolded words indicate key concepts or important terms. Pay special attention to them.
- Use a highlighter pen while you read the textbook to highlight key words and phrases.
- The study guide has an extra wide margin for you to use for taking notes.



## INTRODUCTION TO COMPULIT

### USING THE STUDY GUIDE

FOR EACH LESSON:

STEP 1 Plan a period time to complete at least one lesson.

STEP 2 Collect the following materials before starting a lesson:

For Units 1 - 13 collect:

Study Guide  
Textbook  
Pencil  
Highlighter pen (optional but suggested)

For Units 14 - 25 collect:

Study Guide  
Textbook  
Pencil  
Highlighter pen (optional but suggested)  
Computer and printer  
Software  
Computer paper  
Blank floppy disk

VIII

STEP 3 Read the lesson "OBJECTIVES".

STEP 4 Read "TO COMPLETE LESSON..."

STEP 5 Execute the instructions given in "TO COMPLETE LESSON..."

Repeat the above steps for each lesson within a given unit.

After completing all lessons within a unit, take the "UNIT QUESTIONNAIRE".  
Record your answers on the answer card. Mail the card to NTS.

NTS will check your questionnaire and return your answer card within a week.  
NOTE: For more information about the unit questionnaire see your Student Guide.

## Table of Contents

### VOLUME I

UNIT 1: Introduction to Computing	
LESSON 1A - What is a Computer?.....	1
LESSON 1B - Computers, Large and Small.....	5
UNIT 2: History of Computing, Part 1	
LESSON 2A - Early Generations.....	13
UNIT 3: History of Computing, Part 2	
LESSON 3A - Fourth Generation and Beyond.....	21
UNIT 4: Processing Data on the Computer	
LESSON 4A - Data.....	28
LESSON 4B - Processing Data.....	32
LESSON 4C - Data Maintenance.....	36
UNIT 5: Interactive and Batch Processing	
LESSON 5A - Processing Modes .....	43
LESSON 5B - Elements of Information Processing.....	47
LESSON 5C - Computer Applications.....	51
UNIT 6: Input to the Computer	
LESSON 6A - Data Entry and Terminals.....	59
LESSON 6B - Other Data Entry Devices.....	63
LESSON 6C - Systems and Procedures.....	66
UNIT 7: Output from the Computer	
LESSON 7A - Printers.....	74
LESSON 7B - Displayed Output Devices.....	78
UNIT 8: Users and Information Systems	
LESSON 8A - User Interface - Part 1.....	86
LESSON 8B - User Interface - Part 2.....	90
UNIT 9: Processor Unit and Data Representation	
LESSON 9A - Main Computer Memory Storage.....	98
LESSON 9B - Types of Memory.....	104
UNIT 10: Auxiliary Storage	
LESSON 10A - Auxillary Storage - Microcomputers.....	112
LESSON 10B - Auxillary Storage - Large Computers.....	116



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**Table of Contents (continued)**

UNIT 11: Careers and the Computer Industry	
LESSON 11A - Careers in Information Processing.....	124
LESSON 11B - Information Processing Profession.....	128
UNIT 12: Data Communication	
LESSON 12A - Small Computer to Large Computer.....	135
LESSON 12B - Large Computer to Large Computer.....	139
LESSON 12C - Networks.....	142
UNIT 13: Operating Systems and Systems Software	
LESSON 13A - Operating Systems.....	149
ANSWERS TO PRACTICE TESTS FOR LESSONS 1A - 13A.....	A-1

**VOLUME II**

UNIT 14: Introduction to DOS	
LESSON 14A - Setting Up your Computer.....	1
LESSON 14B - Using MS-DOS.....	10
UNIT 15: Application Software: Introduction to Wordprocessing	
LESSON 15A - Application Software - Part 1.....	35
LESSON 15B - WordStar: Creating a Document.....	39
LESSON 15C - Printing and Cursor Movement.....	47
UNIT 16: Using WordStar	
LESSON 16A - Modifying a Document.....	57
LESSON 16B - WordStar: Additional Features.....	68
LESSON 16C - WordStar: Blocks, Find/Replace.....	77
UNIT 17: Application Software: Electronic Spreadsheets	
LESSON 17A - Application Software - Part 2.....	89
LESSON 17B - SuperCalc3: Building a Spreadsheet.....	92
UNIT 18: Using SuperCalc3	
LESSON 18A - SuperCalc3: Formatting.....	107
LESSON 18B - SuperCalc3: Printing.....	114
UNIT 19: File Organization and Data Base	
LESSON 19A - File Organization and Data Base.....	122
LESSON 19B - dBASE III: Creating a Data Base.....	127



1

2

3

## Table of Contents (continued)

UNIT 20: Using dBASE III	
LESSON 20A - dBASE III: Displaying Records .....	144
LESSON 20B - dBASE III: Sorting Records .....	154
LESSON 20C - dBASE III: Modifying a Data Base .....	163
UNIT 21: Programming Languages	
LESSON 21A - Programming Languages.....	179
LESSON 21B - Introduction to BASIC .....	183
UNIT 22: Programming with Basic, Part 1	
LESSON 22A - Program Design/Development - Part 1 .....	202
LESSON 22B - BASIC: If Then Else .....	207
LESSON 22C - Program Design/Development - Part 2.....	222
UNIT 23: Programming with Basic, Part 2	
LESSON 23A - BASIC: Go To .....	230
LESSON 23B - BASIC Screen Design .....	239
LESSON 23C - BASIC: For Next.....	246
UNIT 24: Systems Analysis and Design	
LESSON 24A - Systems Anaysis and Design.....	256
UNIT 25: Computers in our Society	
LESSON 25A - Computers in our Society.....	266
ANSWERS TO PRACTICE TESTS FOR LESSONS 14A - 25A.....	A-1

1

2

3



### OBJECTIVES

- Explain what a computer is.
- Identify the operations of a computer.
- Identify the major components of a computer.
- Distinguish between computer hardware and software.

### TO COMPLETE LESSON 1A

- STEP 1      Read the major headings in the textbook, pages 1.1 through 1.11.
- STEP 2      Read pages 1.1 through 1.11 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 1A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 1A.
- STEP 5      Score the PRACTICE TEST for Lesson 1A.

## WHAT IS A COMPUTER?

### LESSON 1A

## KEY CONCEPTS

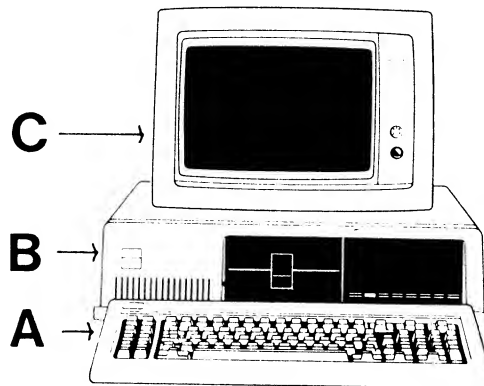
### PAGE NUMBER

2

COMPUTER	1.1
MICROCOMPUTER	1.1
PERSONAL COMPUTER	1.1
INPUT OPERATIONS	1.4
ARITHMETIC OPERATIONS	1.4
LOGICAL OPERATIONS	1.4
OUTPUT OPERATIONS	1.4
STORAGE OPERATIONS	1.4
COMPUTER HARDWARE	1.6
INPUT UNITS	1.6
PROCESSOR UNIT	1.6
MAIN MEMORY	1.6
CENTRAL PROCESSING UNIT (CPU)	1.6
OUTPUT UNITS	1.6
PRINTER	1.6
CATHODE RAY TUBE (CRT)	1.6
AUXILIARY STORAGE UNITS	1.7
DISKETTE	1.7
FLOPPY DISK	1.7
HARD DISK	1.7
COMPUTER PROGRAM	1.8
COMPUTER SOFTWARE	1.8

### PRACTICE TEST

1. Computers are capable of performing (circle the letter of your choice):
  - a) input and output operations only.
  - b) arithmetic, logical, and processing operations only.
  - c) input, output, arithmetic, logical, and storage operations only.
  - d) many different operations depending on the software.
  
2. Using the picture below, identify the components of the computer by writing the letter of the component in the appropriate blank.



\_\_\_ CRT  
\_\_\_ Processor Unit  
\_\_\_ Keyboard

## WHAT IS A COMPUTER?

## LESSON 1A

### PRACTICE TEST (continued)

3. A printer is considered a(n) \_\_\_\_\_ unit.
- a) input
  - b) output
  - c) processor
  - d) storage
4. Which one of the following statements accurately describes a computer?
- a) A computer operates under instructions stored in its own memory unit.
  - b) A computer may contain all required electronic circuits on a small chip.
  - c) A computer can perform arithmetic and logical operations without human intervention.
  - d) All of the above statements accurately describe a computer.
5. Identify the following items as either hardware or software.  
(Write the word hardware or software in the blank.)

_____	central processing unit
_____	computer program
_____	electronic spreadsheet
_____	cathode ray tube

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

### OBJECTIVES

- Distinguish between different types and sizes of computers.
- Describe the different units of a large, centralized computer.
- Identify the different roles played by personnel in an information systems department.
- Identify the major types of software packages used by personal computers.
- Distinguish between personal computers, information centers, and a centralized computer.

### TO COMPLETE LESSON 1B

- STEP 1      Read the major headings in the textbook, pages 1.12 through 1.34.
- STEP 2      Read pages 1.12 through 1.34 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 1B on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 1B.
- STEP 5      Score the PRACTICE TEST for Lesson 1B.



### KEY CONCEPTS

#### PAGE NUMBER

MAINFRAME	1.12
MINICOMPUTER	1.12
INFORMATION SYSTEMS DEPARTMENT	1.13
DATA ENTRY DEVICE	1.14
OPERATOR'S CONSOLE	1.15
MAGNETIC TAPE	1.16
MAGNETIC DISK	1.16
SYSTEMS ANALYST	1.18
COMPUTER PROGRAMMER	1.18
DATA BASE ADMINISTRATOR	1.19
OPERATIONS MANAGER	1.19
SYSTEMS MANAGER	1.19
PROGRAMMING MANAGER	1.19
WORD PROCESSING	1.20
ELECTRONIC SPREADSHEET	1.20
GRAPHIC OUTPUT	1.22
DATA BASE	1.22
PERSONAL COMPUTER NETWORK	1.23
DATA COMMUNICATIONS	1.23
ELECTRONIC MAIL	1.23
INTEGRATED SOFTWARE	1.23
INFORMATION CENTER	1.24

### PRACTICE TEST

1. ABC Insurance Company processes large volumes of data which must be accessed by many users during the day. You've been asked to help them choose a computer. Your choice would be:
  - a) a personal computer network.
  - b) a large, centralized computer.
  - c) microcomputers.
  - d) a personal computer with integrated software.
  
2. Your role in an Information Systems Department is to oversee the activities in the systems analysis and design area. Your title is:
  - a) programming manager.
  - b) operations manager.
  - c) computer programmer.
  - d) systems manager.
  
3. Magnetic tape and magnetic disk are two forms of:
  - a) input units.
  - b) output units.
  - c) auxiliary storage units.
  - d) a processor unit.

### PRACTICE TEST (continued)

4. You need to choose software that can create a variety of charts. You need:
- a) graphic software.
  - b) integrated software.
  - c) word processing software.
  - d) data base software.
5. Which of the following lists computers from the largest and most powerful to the smallest and least powerful?
- a) mainframe, microcomputer, minicomputer
  - b) mainframe, minicomputer, microcomputer
  - c) microcomputer, minicomputer, mainframe
  - d) minicomputer, mainframe, microcomputer

You have just finished Lessons 1A and 1B.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 1.36 and 1.37 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

### QUESTIONS

9

1. Two commonly used auxiliary storage devices for personal computers are:
  - a) magnetic tape and hard disk.
  - b) floppy disk and hard disk.
  - c) diskette and magnetic tape.
  - d) magnetic tape and printers.
  
2. Output units are used to:
  - a) make the data available for processing.
  - b) store data after it has been processed and before it is made available for people to use.
  - c) make information generated from the processing on the computer available to people.
  - d) process data prior to making it available to people.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

3. You design, write, test, and implement specialized software. Your title is:
- a) programming manager.
  - b) operations manager.
  - c) computer programmer.
  - d) data entry operator.
4. Integrated software refers to software packages that:
- a) combine functions such as word processing, electronic spreadsheet, and graphics into a single package.
  - b) allow data to be transferred from one computer to another over a personal network.
  - c) can be executed on any type of computer.
  - d) produce output only on color CRT screens.
5. A computer program is often referred to as:
- a) hardware.
  - b) storage.
  - c) memory.
  - d) software.
6. Which of the following make up the processor unit of a computer?
- a) CPU and auxiliary storage
  - b) CRT and main memory
  - c) CPU and main memory
  - d) Input units and main memory

GO TO THE NEXT PAGE...



### QUESTIONS (continued)

7. You run a small business and you need to purchase a computer to help you with bookkeeping. Your best purchase would be:
- a) a personal computer network.
  - b) a large, centralized computer.
  - c) a mainframe.
  - d) a microcomputer.
8. Which of the following best describes a large computer in a centralized facility?
- a) CRT input, operator's console, magnetic tape storage, and printer output
  - b) CRT input, CRT output, floppy disk storage, printer output
  - c) CRT input, fixed disk storage, printer output
  - d) Keyboard input, fixed disk storage, printer output, CRT output
9. A type of software widely used in the office environment to prepare letters and memos is called:
- a) data base management software.
  - b) word processing software.
  - c) electronic spreadsheet software.
  - d) integrated software.

**QUESTIONS (continued)**

10. Operations that perform comparisons to determine if one value is less than, equal to, or greater than another value are:
- a) logical operations.
  - b) arithmetic operations.
  - c) output operations.
  - d) storage operations.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 2, LESSON 2A

### OBJECTIVES

- Name the first large scale electronic computer.
- Identify the key people and their contributions to the first three generations of computer
- Distinguish between first, second, and third generation computers.
- Distinguish between the different types of computer languages.
- Distinguish between batch processing and time-sharing.

### TO COMPLETE LESSON 2A

13

- STEP 1      Read the major headings in the textbook, pages 2.1 through 2.15.
- STEP 2      Read pages 2.1 through 2.15 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 2A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 2A.
- STEP 5      Score the PRACTICE TEST for Lesson 2A.

## EARLY GENERATIONS

## LESSON 2A

### KEY CONCEPTS

#### PAGE NUMBER

14

JOHN ATANASOFF	2.1
ATANASOFF-BERRY COMPUTER	2.2
JOHN MAUCHLY	2.2
J. PRESER ECKERT, JR.	2.2
ENIAC	2.3
JOHN VON NEUMANN	2.4
STORED PROGRAM CONCEPT	2.4
UNIVAC	2.5
PUNCHED CARDS	2.5
INTERNATIONAL BUSINESS MACHINES (IBM)	2.6
MACHINE LANGUAGE	2.8
AUTOMATIC PROGRAMMING	2.8
FORTRAN	2.9
COMPILER	2.9
COBAL	2.9
TRANSISTOR	2.10
SECOND GENERATION	2.11
SYSTEM/360	2.12
THIRD GENERATION	2.13
SOLID LOGIC TECHNOLOGY	2.13
BATCH PROCESSING	2.13
JOHN KEMENY	2.14
TIME-SHARING	2.14
INTERACTIVE	2.14
BASIC	2.14
DIGITAL EQUIPMENT CORPORATION (DEC)	2.14

### PRACTICE TEST

1. The first large scale electronic digital computer was:
  - a) ABC
  - b) ENIAC
  - c) UNIVAC
  - d) System/360
  
2. Below are listed several systems/developments in the history of computers. Identify each as either a FIRST, SECOND, or THIRD Generation system/development.  
  
\_\_\_\_\_ transistor  
  
\_\_\_\_\_ System/360  
  
\_\_\_\_\_ ENIAC
  
3. For each development/computer below, identify the person(s) responsible for it. Place the letter of the correct choice in the blank.
  - a. Mauchly and Eckert
  - b. John von Neumann
  - c. John Kemeny  
\_\_\_\_\_ stored program concept  
  
\_\_\_\_\_ ENIAC  
  
\_\_\_\_\_ time-sharing



### **PRACTICE TEST (continued)**

4. What converts a software program into machine language that a computer can then execute?
- a) Automatic programming
  - b) Debugger
  - c) Punched cards
  - d) Compiler

You have just finished Lesson 2A.

Before taking this unit questionnaire, read the "Chapter Summary" on page 2.32, items 1-23, in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

17

### QUESTIONS

1. Dr. J. Atanasoff:
  - a) was responsible for developing the vacuum tube, which was later used in computer systems.
  - b) developed the first adding machine that used digital electronics.
  - c) developed and wrote about the stored program concept.
  - d) conceived of and designed the first electronic digital computer.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. The term, automatic programming, used in the early 1950's:
- a) referred to writing a computer program in a notation other than machine language.
  - b) referred to the computer developing the program after the programmer wrote down in English-like fashion, what the program was required to do.
  - c) threatened the profession of programming because there would no longer be a need for programmers.
  - d) was not implemented because the concept of a stored program was not feasible.
3. The second generation of computers was characterized by the use of:
- a) vacuum tubes.
  - b) transistors.
  - c) solid logic technology.
  - d) integrated electronic circuits.
4. BASIC, FORTRAN, and COBOL are examples of:
- a) machine languages.
  - b) batch processing.
  - c) data banks.
  - d) programming languages.

### QUESTIONS (continued)

5. In batch processing:
- a) the data to be processed is gathered together in a group and is processed together as a single job.
  - b) data is entered into the computer system one transaction at a time and is processed at the time the transaction occurs.
  - c) batches of programs are run at one time in order to allow more efficient usage of the computer system.
  - d) data is processed in an interactive mode.
6. Transistors meant that computers could be:
- a) faster and smaller than earlier computers, but more expensive.
  - b) faster, smaller, and less costly than earlier computers.
  - c) were smaller and less costly than earlier computers, but they were slower.
  - d) were faster and less costly than earlier computers but they were larger.
7. Which of the following systems marked the beginning of third generation computer by incorporating solid logic technology?
- a) EDSAC
  - b) Mark I
  - c) System/360
  - d) UNIVAC

## UNIT QUESTIONNAIRE

## LESSON 2A

### QUESTIONS (continued)

8. The stored program concept:
- a) means that a program is stored on auxiliary storage so that it can be used when needed by the computer system.
  - b) means placing computer instructions into main computer memory for execution.
  - c) did not have much of an effect on the way computers were programmed because programs still had to be written in machine language.
  - d) was a significant breakthrough that brought about the third generation of computers.
- 20
9. With the advent of time-sharing, computer processing became interactive, meaning that:
- a) users entered their programs and data, and obtained an almost immediate response from the computer.
  - b) several computers interacted to process data.
  - c) users could interact and operate the computer in a batch processing mode.
  - d) records were processed one at a time.
10. The first commercially available electronic digital computer was the:
- a) ENIAC
  - b) IBM 650
  - c) UNIVAC I
  - d) VAX

MAIL IN YOUR ANSWER CARD

GO TO UNIT 3, LESSON 3A

### OBJECTIVES

- Identify the development that led to the fourth generation of computing.
- Identify the designer of the microprocessor.
- Name the key people who made contributions to the development of the personal computer.
- Define how computers are used in different areas of our society.

### TO COMPLETE LESSON 3A

21

- STEP 1      Read the major headings in the textbook, pages 2.16 through 2.31.
- STEP 2      Read pages 2.16 through 2.31 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 3A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 3A.
- STEP 5      Score the PRACTICE TEST for Lesson 3A.



## FOURTH GENERATION AND BEYOND

## LESSON 3A

### KEY CONCEPTS

#### PAGE NUMBER

LARGE SCALE INTEGRATION (LSI)	2.16
FOURTH GENERATION	2.16
TRANSACTION-ORIENTED MODE	2.17
DATA BANKS	2.17
TED HOFF	2.19
MICROPROCESSOR	2.20
STEVE JOBS	2.20
STEVE WOZNIAK	2.20
APPLE COMPUTERS	2.21
COMPUTER ASSISTED INSTRUCTION (CAI)	2.21
VISICALC	2.21
COMPUTER LITERACY	2.27
OFFICE AUTOMATION	2.27
CAD/CAM	2.28
ROBOTS	2.28

### PRACTICE TEST

1. The following development led to the beginning of fourth generation computing.
  - a) transistor
  - b) photolithography
  - c) LSI
  - d) microprocessor
  
2. Who is credited with the development of the microprocessor?
  - a) Dan Bricklin
  - b) Ted Hoff
  - c) Steve Jobs
  - d) Thomas Watson Jr.
  
3. Below are listed several uses of computers in society. Place a check next to those which are office automation applications.  
  
  - \_\_\_ Ability to rapidly retrieve data stored electronically
  - \_\_\_ CAD/CAM
  - \_\_\_ Word processing
  - \_\_\_ Administrative and decisions support systems through access to spreadsheet and graphic software
  - \_\_\_ Computer literacy for all employees

## UNIT QUESTIONNAIRE

## LESSON 3A

You have just finished Lesson 3A.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 2.32 through 2.33, items 24 through 45, in the textbook.

## INSTRUCTIONS

- STEP 1 Take an answer card from the pocket at the back of the notebook.
- STEP 2 Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3 Take your unit questionnaire.

24

## QUESTIONS

1. Steve Jobs and Steve Wozniak, inventors of one of the first personal computers, are responsible for starting which of the following companies?
  - a) Radio Shack
  - b) Commodore Inc.
  - c) Atari Inc.
  - d) Apple Computer Inc.
  
2. The idea of placing the arithmetic and logic circuits on a single chip, which ultimately led to the development of the microprocessor, was put forth by:
  - a) Ted Hoff.
  - b) John Atanasoff.
  - c) Howard Aiken.
  - d) Steve Jobs and Steve Wozniak.

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSON 3A

### QUESTIONS (continued)

3. The fourth generation of computers was largely made up of:
  - a) vacuum tubes.
  - b) transistors.
  - c) large scale integration.
  - d) punched cards as primary means of input.
  
4. In transaction-oriented mode:
  - a) a given number of transactions are gathered over a period of time and then are processed together.
  - b) data is entered into the computer system at the time a transaction occurs.
  - c) batches of programs are run at one time in order to allow more efficient usage of the computer system.
  - d) transactions are processed without the use of a computer because this is more efficient than processing them as a group on the computer.
  
5. The term office automation refers to:
  - a) the use of sophisticated telephone equipment that allows storage and retrieval of the spoken word.
  - b) a personal computer network set up in an office to speed up data entry.
  - c) secretarial workstations that have been moved into the main computer center of a company so that the data can be closer to the computer system.
  - d) an integrated collection of electronic devices which are used to increase office productivity.

## UNIT QUESTIONNAIRE

## LESSON 3A

### QUESTIONS (continued)

6. During the late 1960's and the early 1970's:
- a) the development of a computer system was relatively inexpensive; therefore, many companies entered the computer manufacturing business.
  - b) heavy research and development costs and the difficulties in competing with IBM forced some companies out of the computer manufacturing business.
  - c) several companies quit the computer manufacturing business because the future for the computer business was not very promising.
  - d) many companies quit the computer manufacturing business, and only IBM was left to develop new computer systems.
- 26
7. The use of robots in manufacturing:
- a) has created social problems because the robots are performing jobs previously done by people.
  - b) has allowed work to be done in environments which would endanger the health of a person.
  - c) creates products with more consistency and precision than a person is capable of doing.
  - d) all of the above.
8. System/370 is an example of:
- a) first generation computers.
  - b) second generation computers.
  - c) third generation computers.
  - d) fourth generation computers.

GO TO THE NEXT PAGE...

### **QUESTIONS (continued)**

9. CAD/CAM is used by which of the following groups of people?
- a) Secretaries
  - b) School teachers
  - c) Architects
  - d) Bank tellers
10. Which of these early software programs was the most important in encouraging business people to use the personal computer as a tool?
- a) Computer assisted instruction
  - b) Electronic spreadsheet
  - c) Graphic software
  - d) Time-sharing software

**MAIL IN YOUR ANSWER CARD**

**GO TO UNIT 4, LESSON 4A**

✓

✓

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### OBJECTIVES

- Identify the four operations that make up the information processing cycle.
- Specify the role of data in the information processing cycle.
- Describe the ways in which data can be organized.

### TO COMPLETE LESSON 4A

- |               |   |
|---------------|---|
| <u>STEP 1</u> | Read the major headings in the textbook, pages 3.1 through 3.4.         |
| <u>STEP 2</u> | Read pages 3.1 through 3.4 in the textbook.                             |
| <u>STEP 3</u> | Review KEY CONCEPTS for Lesson 4A on the next page of this study guide. |
| <u>STEP 4</u> | Take the PRACTICE TEST for Lesson 4A.                                   |
| <u>STEP 5</u> | Score the PRACTICE TEST for Lesson 4A.                                  |



### KEY CONCEPTS

	<u>PAGE NUMBER</u>
INFORMATION PROCESSING CYCLE	3.1
DATA	3.3
DATA ITEM	3.3
DATA FIELD	3.3
RECORD	3.3
FILE	3.3

### PRACTICE TEST

1. The information processing cycle consists of the following operations:
  - a) input, processing, output, and storage.
  - b) input, processing, and output.
  - c) input, output, logical, and arithmetic operations.
  - d) input, logical operations, output, and storage.
2. Using the picture below, which of the following is an example of a record:

PAYROLL REGISTER		
SOCIAL SECURITY	EMPLOYEE NAME	PAYCHECK AMOUNT
332-98-8776	HAYNES	\$327.00
776-09-9731	JOHNSTON	\$265.45
751-07-3452	RADCLIFFE	\$289.67

30

- a) Payroll Register
- b) 7776-09-9731      Johnston      \$265.45
- c) Haynes  
Johnston  
Radcliffe
- d) Paycheck  
Amount

GO TO THE NEXT PAGE...

### **PRACTICE TEST (continued)**

3. A collection of records is:
  - a) a data item.
  - b) a data field.
  - c) information.
  - d) a file.
  
4. The prime ingredient in the information processing cycle is:
  - a) processing.
  - b) data.
  - c) input.
  - d) output.

### OBJECTIVES

- Describe the role of data and the computer program in the information processing cycle.
- Describe the nature of a looping instruction within a computer program.
- Identify the three types of logical operations.
- Define the major ways data is retrieved from auxiliary storage.

### TO COMPLETE LESSON 4B

- STEP 1      Read the major headings in the textbook, pages 3.4 through 3.12.
- STEP 2      Read pages 3.4 through 3.12 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 4B on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 4B.
- STEP 5      Score the PRACTICE TEST for Lesson 4B.

## PROCESSING DATA ON THE COMPUTER

## LESSON 4B

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
INPUT OPERATION	3.4
ARITHMETIC OPERATION	3.5
LOOPING	3.7
LOGICAL OPERATION	3.7
OUTPUT OPERATION	3.9
AUXILIARY STORAGE OPERATION	3.10
SEQUENTIAL RETRIEVAL	3.10
RANDOM RETRIEVAL	3.11

### PRACTICE TEST

1. Processing operations occurring within the information processing cycle are:
  - a) input, output, storage, sequential, and random.
  - b) input, arithmetic, logical, output, and storage.
  - c) input, logical, processing, output, and storage.
  - d) input, arithmetic, output, and storage.
  
2. Data must be stored in the main memory before it can be processed. This is a(n):
  - a) input operation.
  - b) logical operation.
  - c) output operation.
  - d) storage operation.
  
3. Once stored, the data is processed under the control of the \_\_\_\_\_, stored in the main memory.
  - a) input operations.
  - b) central processing unit.
  - c) computer program.
  - d) arithmetic processing.
  
4. Repeating instructions within a computer program is called:
  - a) logical structure.
  - b) looping.
  - c) input/output.
  - d) calculating mode.

### **PRACTICE TEST (continued)**

5. Which one of the following is NOT a logical operation?
  - a) Equal
  - b) Addition
  - c) Greater than
  - d) Less than
  
6. Data is retrieved from auxiliary storage in which of the two major ways?
  - a) Sequential and randomly
  - b) Sequentially and logically
  - c) Randomly and logically
  - d) Piece by piece and using loops

### OBJECTIVES

- Define updating records.
- Distinguish between adding, changing, and deleting records.

### TO COMPLETE LESSON 4C

- STEP 1      Read the major headings in the textbook, pages 3.12 through 3.15.
- STEP 2      Read pages 3.12 through 3.15 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 4C on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 4C.
- STEP 5      Score the PRACTICE TEST for Lesson 4C.



## DATA MAINTENANCE

## LESSON 4C

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
UPDATING	3.12
ADDING RECORDS	3.12
CHANGING DATA	3.12
DELETING RECORDS	3.14

### PRACTICE TEST

1. You go to the bank and open up a checking account. Which one of the following activities would the bank first perform?
  - a) Print a record
  - b) Change a record
  - c) Add a record
  - d) Delete a record
  
2. Next to each of the activities below, label them as either ADDING, CHANGING, or DELETING records.  
  
\_\_\_\_\_ remove a name from the data base.  
\_\_\_\_\_ correct data that is incorrect.  
\_\_\_\_\_ enter a new record.
  
3. Updating consists of:
  - a) input and output operations only.
  - b) adding, deleting, and changing records only.
  - c) moving and copying records only.
  - d) entering new records and changing incorrect records only.

## UNIT QUESTIONNAIRE

## LESSONS 4A - 4C

You have just finished Lessons 4A, 4B, and 4C.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 3.16 and 3.17 in the textbook.

### INSTRUCTIONS

- STEP 1 Take an answer card from the pocket at the back of the notebook.
- STEP 2 Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3 Take your unit questionnaire.

39

### QUESTIONS

1. The input operation on a computer:
  - a) causes data to be placed in main computer memory.
  - b) causes data to be moved from one location to another in main computer memory.
  - c) causes the results of computer processing to be printed or displayed in a usable.
  - d) causes data to be prepared in a machine-readable format for input to a computer.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. When processing on a computer, data is often organized as:
  - a) fields, records, and information.
  - b) fields, records, and data items.
  - c) records, files, and phrases.
  - d) fields, records, and files.
  
3. When data is stored in main memory, the location where the input data resides is determined by:
  - a) the central processing unit.
  - b) the program.
  - c) the computer operator.
  - d) auxiliary storage devices.
  
4. The correct sequence of instructions necessary to produce a salary report is:
  - a) read a record, calculate pay, format the report, and print the report.
  - b) read a record, calculate pay, format the report, and store the report.
  - c) read a record, format the report, print the report, and calculate pay.
  - d) calculate pay, print the report, and store the report.

### QUESTIONS (continued)

5. Arithmetic operations:
- a) are performed on data stored in the auxiliary storage.
  - b) are performed on data stored in the main computer memory.
  - c) must be carried out by hand and then the results are fed to the computer.
  - d) while important, are not one of the main operations performed on business computers.
6. The logical operations performed on a computer are based upon the ability of a computer:
- a) to perform arithmetic calculations on data stored in main computer memory.
  - b) to distinguish between fields and records as they are input from the keyboard.
  - c) to process numeric as well as alphabetic data.
  - d) to compare data stored in main computer memory.
7. A major difference between auxiliary storage and main computer memory is that:
- a) access to data stored on auxiliary storage is faster than access to data stored in main memory.
  - b) access to data stored on auxiliary storage is slower than access to data stored in main memory.
  - c) main memory can hold twice as much data as can auxiliary storage.
  - d) data stored in auxiliary storage disappears when the electrical power to the computer is turned off.

### QUESTIONS (continued)

8. The method of retrieval that provides the fastest access to a record is called:
- a) relative.
  - b) sequential.
  - c) random.
  - d) direct.
9. Random retrieval of data means that:
- a) records stored on tape can be retrieved regardless of the order in which they were physically stored.
  - b) records stored on disk can be retrieved regardless of the order in which they were physically stored.
  - c) records stored on disk can be retrieved quickly, as long as they originally were stored in sequential order.
  - d) records are retrieved one after the other on either disk or tape.
10. In order to keep data current, the records within files must be:
- a) reentered periodically.
  - b) stored on tape.
  - c) updated.
  - d) printed and corrected if necessary.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 5, LESSON 5A

1

2

3

### OBJECTIVES

- Define "interactive" and "batch" processing modes, and distinguish between them.
- Define "transaction-oriented processing."
- Given an application, determine which processing mode is most appropriate.

### TO COMPLETE LESSON 5A

- |               |   |
|---------------|---|
| <u>STEP 1</u> | Read the major headings in the textbook, pages 4.1 through 4.7.         |
| <u>STEP 2</u> | Read pages 4.1 through 4.8 in the textbook.                             |
| <u>STEP 3</u> | Review KEY CONCEPTS for Lesson 5A on the next page of this study guide. |
| <u>STEP 4</u> | Take the PRACTICE TEST for Lesson 5A.                                   |
| <u>STEP 5</u> | Score the PRACTICE TEST for Lesson 5A.                                  |



### KEY CONCEPTS

	<u>PAGE NUMBER</u>
DATA	4.1
INFORMATION PROCESSING CYCLE	4.1
INTERACTIVE PROCESSING	4.2, 4.7
BATCH PROCESSING	4.2, 4.4
TRANSACTION-ORIENTED PROCESSING	4.3
SOURCE DOCUMENTS	4.4
POINT OF SALE TERMINAL	4.7

## PROCESSING MODES

## LESSON 5A

### PRACTICE TEST

1. A processing mode is interactive when:
  - a) processing takes place after data for all records have been entered.
  - b) data are entered, processing occurs, and output is produced immediately.
  - c) data are entered and processing takes place at a later time.
  - d) all records are grouped together and processed at the same time.
  
2. Processing is in batch mode when:
  - a) data are entered and processing takes place at a later time.
  - b) data are entered, processing occurs, and output is produced immediately.
  - c) data records are accumulated and are processed as a group.
  - d) none of the above.
  
3. For each application below, fill in the type of processing (INTERACTIVE, TRANSACTION-ORIENTED, or BATCH) that would be best for the application.

_____	Credit card charges
_____	Car rentals
_____	Obtaining a bank account balance
_____	Payroll processing

GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

4. A special form of interactive processing is called transaction-oriented processing. When this type of processing is used:
  - a) the computer or terminal operator enters all of the data related to a complete business transaction, then the program performs all the processing required for that particular transaction.
  - b) the computer or terminal operator enters all of the data related to a complete business transaction, and the processing is performed at a later time.
  - c) all the source documents of all the transactions are grouped together and sent to the data entry department for processing the next day as a group.
  - d) none of the above.

### OBJECTIVES

- Identify and define the four key attributes of data.
- Identify and define the three major elements of data integrity.
- Define the terms "procedure" and "system" as used in information processing.
- Explain the role of data attributes, systems, procedures, and personnel in an information processing system.

### TO COMPLETE LESSON 5B

47

- STEP 1      Read the major headings in the textbook, pages 4.8 through 4.11.
- STEP 2      Read pages 4.8 through 4.11 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 5B on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 5B.
- STEP 5      Score the PRACTICE TEST for Lesson 5B.

### KEY CONCEPTS

#### PAGE NUMBER

ATTRIBUTES OF DATA	4.8
DATA INTEGRITY	4.8
DATA ACCURACY	4.9
RELIABLE DATA ENTRY	4.9
DATA EDITING	4.9
TIMELINESS	4.9
AVAILABILITY (OF DATA)	4.9
DATA MANAGEMENT	4.10
DATA SECURITY AND CONTROL	4.10
PROCEDURE	4.10
SYSTEM	4.10
DOCUMENTATION	4.11

### PRACTICE TEST

1. Place a check mark next to the four important attributes of data:

<input type="checkbox"/> Data management	<input type="checkbox"/> Availability
<input type="checkbox"/> Data security and control	<input type="checkbox"/> Data editing
<input type="checkbox"/> Data storage medium	<input type="checkbox"/> Timeliness
<input type="checkbox"/> Data integrity	<input type="checkbox"/> Data entry

2. The three primary elements of data integrity are:

- a) data accuracy, data security, and data control.
- b) reliable data entry, timeliness, and data accuracy.
- c) reliable data entry, timeliness, and data editing.
- d) data accuracy, data availability, and data security.

### PRACTICE TEST (continued)

3. Below are a list of lettered items. Place the letter in the appropriate blank.
- a. The people involved in information processing.
  - b. Those who interface directly with the computer.
  - c. A series of logical steps by which all repetitive action are initiated, carried forward, controlled, and finalized.
  - d. A network of related procedures designed to perform an activity.
  - e. Correct value inputs.

50

- \_\_\_\_\_ procedure
- \_\_\_\_\_ reliable data entry
- \_\_\_\_\_ computer user
- \_\_\_\_\_ system
- \_\_\_\_\_ personnel

4. We need data, systems, procedures, and personnel to:
- a) use basic computer operations.
  - b) train and educate computer users.
  - c) use computers successfully.
  - d) none of the above

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

### **OBJECTIVES**

- Identify and describe the eight general categories of applications suitable for processing on a computer.
- Given a specific application, identify which general category it best belongs to.
- Describe the five characteristics common to each general category of applications.

### **TO COMPLETE LESSON 5C**

- STEP 1      Read the major headings in the textbook, pages 4.12 through 4.18.
- STEP 2      Read pages 4.12 through 4.25 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 5C on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 5C.
- STEP 5      Score the PRACTICE TEST for Lesson 5C.



### KEY CONCEPTS

	<u>PAGE NUMBER</u>
COMPUTER APPLICATIONS (CATEGORIES)	4.12
SORTING	4.14
SELECTIVE REPORT	4.14
CONTROL BREAK REPORT	4.14
SUMMARY REPORT	4.14

### PRACTICE TEST

1. Which one of the following is NOT one of the eight general categories of computer applications?
  - a) Communicating data and information
  - b) Processing transactions as they occur
  - c) Manipulating data storage modes
  - d) Changing and updating data
  
2. Computers should be considered for use when it is necessary to perform numerous and complex calculations. Which one of the following applications would fall into the category of numerous and complex calculations?
  - a) Data communication
  - b) Electronic spreadsheets
  - c) Word processing
  - d) Report generation
  
3. A common characteristic shared by all eight general categories of computer applications is that they all:
  - a) perform complex calculations.
  - b) use only batch processing mode.
  - c) update data.
  - d) process data in some manner.

### PRACTICE TEST (continued)

4. The eight general categories of applications are
1. performing numerous and/or complex calculations.
  2. processing large volumes of data.
  3. sorting, selecting, summarizing, and reporting data.
  4. processing transactions as they occur.
  5. rapid data retrieval.
  6. manipulating text and symbols.
  7. changing and updating data.
  8. communicating data and information.

Each task below is an example from one of the general categories above. Write the number corresponding to the correct category in each blank.

54

- \_\_\_\_\_ Alphabetizing a list of names
- \_\_\_\_\_ Composing a letter
- \_\_\_\_\_ Checking inventory to fill an order
- \_\_\_\_\_ Creating electricity billing statements for many customers.

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

You have just finished Lessons 5A, 5B, and 5C.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 4.26 and 4.27 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

55

### QUESTIONS

1. You are a bank teller and a customer requests an account balance. The most likely processing mode for this task is:
  - a) interactive.
  - b) batch.
  - c) sequential.
  - d) none of the above. This is not an appropriate computer application.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. In order for a user to have confidence in the results of information processing, the data must be:
  - a) accurate, reliable, and timely.
  - b) accurate, reliable, and updated.
  - c) accessible to all personnel.
  - d) properly edited and summarized.
  
3. Computers should be considered for use when it is necessary or desirable to:
  - a) process large volumes of data.
  - b) sort, select, summarize, and report on large volumes of data.
  - c) rapidly retrieve data stored in files.
  - d) all of the above.
  
4. A system may be defined as:
  - a) a network of related procedures designed to train and educate computer personnel.
  - b) a network of related procedures designed to perform some activity.
  - c) a large connection of information processing stations that share common data files.
  - d) two or more computers connected in a network.

### QUESTIONS (continued)

5. Check processing, payroll processing, and processing of credit card charges and payments are all examples of:
- a) sequential processing.
  - b) interactive processing.
  - c) batch processing.
  - d) interactive, transaction-oriented processing.
6. You have been asked to develop a mathematics software package. How would you categorize this application?
- a) Rapid data retrieval
  - b) Changing and updating data
  - c) Performing numerous and/or complex calculations
  - d) Processing transactions as they occur
7. Which one of the following is a key attribute of data?
- a) Data accuracy
  - b) Data management
  - c) Data reliability
  - d) Data storage medium

### QUESTIONS (continued)

8. In an information processing system, data attributes, systems, procedures, and personnel:
- a) function as optional elements that are used mainly for larger machines when processing power is desired.
  - b) are the basic operations in the information processing cycle.
  - c) are required to ensure that useful information is produced by the computer.
  - d) are required in order to implement interactive and batch processing on the computer.
9. The process of examining records in a file and placing them in ascending or descending sequence based upon some value(s) in a field within the record is called:
- a) selecting.
  - b) searching.
  - c) summarizing.
  - d) sorting.
10. Transaction-oriented processing is the best processing type for:
- a) auto rentals.
  - b) check processing by banks.
  - c) utility company billing.
  - d) company payroll.

### OBJECTIVES

- Describe the three uses of data after being entered into main memory.
- Distinguish between on-line and off-line data entry.
- Identify the three categories of display terminals, and describe key features of each.
- Recognize seven display features available on some terminals.
- Describe the two major types of non-CRT terminals used for data entry purposes.

### TO COMPLETE LESSON 6A

- STEP 1      Read the major headings in the textbook, pages 5.1 through 5.17.
- STEP 2      Read pages 5.1 through 5.17 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 6A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 6A.
- STEP 5      Score the PRACTICE TEST for Lesson 6A.



### KEY CONCEPTS

#### PAGE NUMBER

KEYPUNCH	5.1
INQUIRY	5.2
ON-LINE (DATA ENTRY)	5.2, 5.14
OFF-LINE (DATA ENTRY)	5.3
SOURCE DOCUMENTS	5.3
TERMINALS	5.5
DISTRIBUTED DATA ENTRY	5.5
LIMITED FUNCTION TERMINALS	5.6
(DUMB TERMINALS)	
SMART TERMINALS	5.6
TEXT EDITING	5.6
INTELLIGENT TERMINALS	5.7
(PROGRAMMABLE TERMINALS)	
UPLOADING	5.7
REVERSE VIDEO	5.8
UNDERLINING	5.9
BOLD	5.9
BLINKING	5.9
DOUBLE SIZE	5.9
SCROLLING	5.9
PAGING	5.9
CURSOR	5.10
FUNCTION KEYS	5.11
TELEPRINTERS	5.12
INTEGRATED WORKSTATIONS	5.13
DEFAULT DATA	5.16

### PRACTICE TEST

1. A valid use of data entered into main memory is:
  - a) to control the computer.
  - b) to request information from the computer.
  - c) to serve as the source from which information is produced.
  - d) all of the above.
  
2. Data entry that is performed using devices connected directly to the computer that will process the data is referred to as:
  - a) off-line data entry.
  - b) on-line data entry.
  - c) direct data entry.
  - d) distributed data entry.
  
3. List the names of the three basic categories of display terminals.

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### PRACTICE TEST (continued)

4. Which one of the items below is NOT a display feature available on certain smart and intelligent terminals?
- a) Reverse video
  - b) Underlining
  - c) Ergonomics
  - d) Paging
5. Place a check mark next to the two major types of non-CRT terminals used for data entry.
- \_\_\_\_\_ Color display terminals
  - \_\_\_\_\_ Keyboard/printer terminals
  - \_\_\_\_\_ Reverse video terminals
  - \_\_\_\_\_ Integrated workstations

### OBJECTIVES

- Identify the major off-line data entry devices for batch processing.
- Describe the characteristics and advantages of key-to-disk shared processor systems.
- Identify four types of special-purpose input devices, and give an example of a use for each one.

### TO COMPLETE LESSON 6B

- STEP 1      Read the major headings in the textbook, pages 5.17 through 5.24.
- STEP 2      Read pages 5.17 through 5.24, and pages 5.27 through 5.31 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 6B on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 6B.
- STEP 5      Score the PRACTICE TEST for Lesson 6B.

## OTHER DATA ENTRY DEVICES

## LESSON 6B

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
KEY-TO-DISK SHARED PROCESSOR SYSTEMS	5.18
KEY VERIFICATION	5.20
OPTICAL CHARACTER READER (OCR)	5.21
MARK READER	5.22
OPTICAL MARK READERS (OMR)	5.22
MAGNETIC INK CHARACTER RECOGNITION (MICR)	5.22
DATA COLLECTION DEVICES	5.23

### PRACTICE TEST

1. The first device used for off-line data entry was the:
  - a) off-line display terminal.
  - b) key-to-disk shared processor.
  - c) digitizer.
  - d) keypunch.
  
2. One of the chief characteristics of a key-to-disk shared processor system is that:
  - a) the keying stations are under control of some type of processor, usually a dedicated minicomputer.
  - b) it allows an unlimited number of remote stations to be attached and share the same processor.
  - c) it saves time because the minicomputer is connected directly into the main computer that will perform the processing.
  - d) all of the above.
  
3. Optical character readers, mark readers, magnetic ink character recognition, and data collection devices are examples of:
  - a) special-purpose input devices.
  - b) key verification devices.
  - c) on-line terminals.
  - d) none of the above.

### OBJECTIVES

- Describe the ten issues concerning systems and procedures that must be addressed to ensure successful data entry.
- Identify the four categories of tests performed on input data, and give specific examples of tests in each category.
- Explain the importance of systems and procedures developed for data entry.

66

### TO COMPLETE LESSON 6C

- STEP 1      Read the major headings in the textbook, pages 5.24 through 5.27.
- STEP 2      Read pages 5.24 through 5.27 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 6C on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 6C.
- STEP 5      Score the PRACTICE TEST for Lesson 6C.

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
ORIGINATION OF DATA	5.24
CENTRALIZED DATA ENTRY	5.24
SOURCE DATA COLLECTION	5.25
TRANSACTION VOLUME	5.25
TRANSCRIPTION ERROR	5.26
TRANSPOSITION ERROR	5.26
CHECK DIGIT	5.26
DATA CONTROLS AND SECURITY	5.26



### PRACTICE TEST

1. Three systems and procedures issues that must be addressed in data entry are:
  - a) origination of data, processing mode, and flow of input data.
  - b) origination of data, flow of input data, and editing and error handling.
  - c) personnel requirements, transaction volume, and data controls and security.
  - d) Both b and c are correct.
2. A test performed on input data to ensure that the hours worked field does not exceed 80 is called:
  - a) a transcription test.
  - b) a transposition test.
  - c) a reasonableness test.
  - d) a data consistency test.
3. A common means of finding transcription and transposition errors is:
  - a) the use of a check digit.
  - b) the use of scanning devices.
  - c) the use of validation.
  - d) the use of intelligent terminals.

### **PRACTICE TEST (continued)**

4. The systems and procedures developed for the data entry function are important in order to:
  - a) avoid all errors.
  - b) use scanning devices.
  - c) ensure data integrity.
  - d) none of the above.

**GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS**

## UNIT QUESTIONNAIRE

## LESSONS 6A - 6C

You have just finished Lessons 6A, 6B, and 6C.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 5.32 and 5.33 in the textbook.

## INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

70

## QUESTIONS

1. A dumb terminal is one which:
  - a) requires no training to operate.
  - b) does nothing more than pass data keyed by the operator over some type of communication line to the computer.
  - c) has little use because it can merely enter data into main computer storage.
  - d) contains a keyboard and a hard-copy printer.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. Which item below adequately captures the difference between on-line and off-line data entry?
  - a) On-line data entry is for communications, off-line data entry is for text processing.
  - b) Special input devices use on-line data entry, traditional devices use off-line data entry.
  - c) On-line data entry refers to a direct connection between a device to a computer, off-line data entry refers to no such connection.
  - d) None of the above.
  
3. In the 1970's, IBM developed an off-line data entry device that allowed data to be stored on:
  - a) a diskette or floppy disk.
  - b) magnetic tape.
  - c) magnetic disk.
  - d) all of the above.
  
4. Which one of the following is one of the ten systems and procedures issues?
  - a) Personnel requirements
  - b) Processing mode
  - c) Flow of data output
  - d) Both a and c are correct

### QUESTIONS (continued)

5. Reverse video on a CRT screen refers to:
- a) characters that were sent to the screen upside down.
  - b) communication terminals that allow each user to see information on the other's terminal.
  - c) the process of reversing the normal display on the screen.
  - d) none of the above.
6. Which on the following does NOT describe an advantage of key-to-disk shared processor systems over other forms of data entry?
- a) Improved operator productivity
  - b) Improved data editing
  - c) Immediate keying as required set-up is performed by an attached minicomputer
  - d) Automatic correction of data entry errors by an attached minicomputer
7. A transposition error occurs when:
- a) values are incorrectly copied from a source document.
  - b) an invalid check digit is entered.
  - c) two numbers are switched.
  - d) the computer reads the data incorrectly.

## UNIT QUESTIONNAIRE

## LESSONS 6A - 6C

### QUESTIONS (continued)

8. A program performing editing to check for valid inputs to a zip code field is an example of:
- a) a test of data consistency.
  - b) a test for transposition errors.
  - c) a test to ensure that data controls and security are applied.
  - d) a test to ensure numeric data is included in a field.
9. The purpose of an integrated workstation is:
- a) to give executives the ability to observe their employees via CRT terminal without the employee's knowledge.
  - b) to provide at a single convenient location for easy access to a number of functions that assist employees in performing their jobs better.
  - c) to increase communications throughout the department by providing a telephone network that allows people to see a picture of the person with whom they are communicating.
  - d) to eliminate the keyboard as a data entry device.
10. Optical character reader (OCR) devices:
- a) electronically scan words on a document and compare them with a predefined dictionary.
  - b) electronically scan the shape of a character on a document and compare it with a predefined shape.
  - c) read the raised dot patterns of characters and compare the number of dots with a template.
  - d) electronically sense magnetic ink in characters to determine the character to read.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 7, LESSON 7A

1

2

3

### OBJECTIVES

- Distinguish between impact printing and nonimpact printing.
- Identify the types of printers available for home and personal computers.
- Describe the attributes of dot matrix printers.
- State the factors to consider when selecting a printer for home, personal, or small business use.
- Identify and describe the types of printers used for large computers.
- Describe five types of printed reports.

74

### TO COMPLETE LESSON 7A

- STEP 1      Read the major headings in the textbook, pages 6.1 through 6.13.
- STEP 2      Read pages 6.1 through 6.15 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 7A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 7A.
- STEP 5      Score the PRACTICE TEST for Lesson 7A.



## PRINTERS

## LESSON 7A

### KEY CONCEPTS

#### PAGE NUMBER

PRINTED REPORTS	6.1, 6.13
IMPACT PRINTING	6.2
FRONT STRIKING	6.2
HAMMER STRIKING	6.2
NONIMPACT PRINTING	6.2
SERIAL PRINTERS	6.3
LINE PRINTERS	6.3, 6.10
PAGE PRINTERS	6.3
THERMAL PRINTERS	6.3
(ELECTRO-SENSITIVE PRINTERS)	
DOT MATRIX PRINTER	6.4
MOVABLE PRINT HEAD	6.4
LETTER QUALITY	6.5, 6.7
CONTINUOUS FORM PAPER	6.6
TRACTOR FEED MECHANISMS	6.7
FRICTION FEED MECHANISMS	6.7
DAISY WHEEL PRINTER	6.7
INK JET PRINTER	6.8
LASER PRINTER	6.9, 6.12
CHAIN PRINTER (TRAIN PRINTER)	6.10
BAND PRINTERS	6.11
INTERNAL REPORT	6.13
EXTERNAL REPORT	6.13
DETAIL REPORT	6.14
SUMMARY REPORT	6.14
EXCEPTION REPORT	6.14

### PRACTICE TEST

1. Which type of printer below can be classified as as nonimpact printer?
  - a) Ink jet printer
  - b) Dot matrix printer
  - c) Daisy wheel printer
  - d) All of the above
  
2. Three types of printers recommended for home or personal use are:
  - a) chain printers, band printers, and laser printers.
  - b) dot matrix printers, daisy wheel printers, and ink jet printers.
  - c) dot matrix printers, daisy wheel printers, and chain printers.
  - d) ink jet printers, dot matrix printers, and line printers.
  
3. Printers on computers that process large volumes of data often print a great deal of information. The use of \_\_\_\_\_ is required.
  - a) daisy wheel printers
  - b) laser printers
  - c) letter quality printers
  - d) high speed printers

**PRACTICE TEST (continued)**

4. A report used by individuals in the daily performance of their jobs is called:
- a) an internal report.
  - b) an external report.
  - c) a daily report.
  - d) a detail report.
5. Place a check mark next to the four items below which are factors to consider when selecting a printer for home, personal, or small business use.
- ☐ The quality of print
  - ☐ The computer to be used
  - ☐ The speed of printing
  - ☐ The type of paper feed mechanism
  - ☐ The size of the printer
  - ☐ Cost

### OBJECTIVES

- Describe the types of CRT monitors and features of displayed output.
- List the capabilities of graphics display devices.
- Describe three other output devices besides printers and displays.

### TO COMPLETE LESSON 7B

- |               |   |
|---------------|---|
| <u>STEP 1</u> | Read the major headings in the textbook, pages 6.15 through 6.25.       |
| <u>STEP 2</u> | Read pages 6.15 through 6.25, in the textbook.                          |
| <u>STEP 3</u> | Review KEY CONCEPTS for Lesson 7B on the next page of this study guide. |
| <u>STEP 4</u> | Take the PRACTICE TEST for Lesson 7B.                                   |
| <u>STEP 5</u> | Score the PRACTICE TEST for Lesson 7B.                                  |

## DISPLAYED OUTPUT DEVICES

## LESSON 7B

### KEY CONCEPTS

#### PAGE NUMBER

**79**

DISPLAYED OUTPUT	6.15
MONOCHROME	6.16
RASTER-SCAN CRT MONITORS	6.16
PHOSPHOR-COATED SCREEN	6.17
DOT-ADDRESSABLE DISPLAYS	6.17
BIT-MAPPED DISPLAYS	6.17
PIXEL (PICTURE ELEMENT)	6.17
COMPOSITE VIDEO MONITOR	6.18
RGB MONITOR	6.19
COMPUTER GRAPHICS	6.19
PIE CHART	6.19
BAR CHARTS	6.20
LINE CHARTS	6.20
COMPUTER-AIDED DESIGN (CAD)	6.21
COMPUTER-AIDED MANUFACTURING (CAM)	6.21
PLASMA SCREEN	6.22
LIQUID CRYSTAL DISPLAYS (LCD)	6.22
COMPUTER PLOTTER	6.23
PEN PLOTTERS	6.23
FLATBED PLOTTER	6.23
DRUM PLOTTER	6.23
ELECTROSTATIC PLOTTER	6.24
COMPUTER OUTPUT MICROFILM (COM)	6.24
MICROFICHE	6.24
COMPUTER-ASSISTED RETRIEVAL	6.25
VOICE OUTPUT	6.25
VOICE SYNTHESIZER	6.25

### PRACTICE TEST

1. Most CRT monitors used in connection with computers are:
  - a) dot-addressable displays.
  - b) RGB monitors.
  - c) raster-scan monitors.
  - d) bit-mapped displays.
  
2. The term "monochrome" refers to:
  - a) one chrome plate on the monitor support frame.
  - b) one color plus a black background.
  - c) graphics monitors.
  - d) none of the above.
  
3. Pie charts, bar charts, and line charts usually require use of a (choose the best answer):
  - a) monochrome display.
  - b) graphics display device.
  - c) pixel.
  - d) composite video monitor.

### PRACTICE TEST (continued)

4. Place a check next to the three terms below that refer to output devices that are NOT classified as printers or display devices.

☐ Plotters

☐ Computer output microfilm

☐ Computer-assisted retrieval device

☐ Voice synthesizer

☐ Liquid crystal output device

81

5. Which one of the following is NOT a type of plotter?
- a) Electronic plotter
  - b) Drum plotter
  - c) Flatbed plotter
  - d) Pen plotter

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

You have just finished Lessons 7A and 7B.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 6.26 and 6.27 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

82

### QUESTIONS

1. The two techniques used for impact printers are:
  - a) front striking and rear striking.
  - b) hammer striking and front striking.
  - c) hammer striking and rear striking.
  - d) type striking and font striking.
  
2. The type of printer that is used with more home and personal computers than any other type is:
  - a) the line printer.
  - b) the dot matrix printer.
  - c) the page printer.
  - d) the band printer.

GO TO THE NEXT PAGE...



## UNIT QUESTIONNAIRE

## LESSONS 7A - 7B

### QUESTIONS (continued)

3. On dot matrix printers capable of printing different styles of print, the formation of letters is dependent upon:
  - a) the software directing the printer.
  - b) the system hardware.
  - c) the software and the hardware.
  - d) none of the above.
  
4. The least expensive printers available for home and personal use are:
  - a) dot matrix printers.
  - b) daisy wheel printers.
  - c) thermal printers.
  - d) chain printers.
  
5. Another common name for the chain printer is:
  - a) the train printer.
  - b) the link printer.
  - c) the rotating printer.
  - d) the band printer.

### QUESTIONS (continued)

6. There are three major presentation formats for printed reports. They are:
  - a) detail reports, classified reports, and exception reports.
  - b) classified reports, summary reports, and exception reports.
  - c) exception reports, detail reports, and summary reports.
  - d) summary reports, detail reports, and classified reports.
  
7. The two types of color monitors that are available are:
  - a) composite video monitors and RGB monitors.
  - b) RGB monitors and character display monitors.
  - c) composite video monitors and character display monitors.
  - d) video game monitors and business monitors.
  
8. Display monitors which are used for graphics are called:
  - a) color monitors.
  - b) monochrome monitors.
  - c) pixel displays.
  - d) dot-addressable displays.

## UNIT QUESTIONNAIRE

## LESSONS 7A - 7B

### QUESTIONS (continued)

9. The type of monitor that should be used when high quality color graphics are required is:
- a) the monochrome monitor.
  - b) the raster-scan monitor.
  - c) the composite video monitor.
  - d) the RGB monitor.
10. The device which can transform words stored in main computer memory into human speech is called a:
- a) voice generator device (VGD).
  - b) voice synthesizer.
  - c) vocal simulation board.
  - d) speech developer program.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 8, LESSON 8A

### OBJECTIVES

- Define "user interface".
- Describe the activities that occur when a user interfaces with a computer.
- Describe the devices for displaying messages to users.
- Identify and describe devices for entering data and commands.

### TO COMPLETE LESSON 8A

- |               |   |
|---------------|---|
| <u>STEP 1</u> | Read the major headings in the textbook, pages 7.1 through 7.9.         |
| <u>STEP 2</u> | Read pages 7.1 through 7.9 in the textbook.                             |
| <u>STEP 3</u> | Review KEY CONCEPTS for Lesson 8A on the next page of this study guide. |
| <u>STEP 4</u> | Take the PRACTICE TEST for Lesson 8A.                                   |
| <u>STEP 5</u> | Score the PRACTICE TEST for Lesson 8A.                                  |

### KEY CONCEPTS

#### PAGE NUMBER

USER INTERFACE	7.1
USER FRIENDLY	7.2
CURSOR	7.3
ABSOLUTE CURSOR MOVEMENT	7.3
RELATIVE CURSOR MOVEMENT	7.3
ICON	7.4
ERGONOMICS	7.5
POINTING DEVICE	7.6
MOUSE	7.6
TOUCH SCREENS	7.8
VOICE INPUT	7.9
VOCABULARY	7.9
VOICE RECOGNITION	7.9

### PRACTICE TEST

1. A user interface may be defined as:
  - a) the combination of hardware and software that allows a user to communicate with and control the functional aspects of an information system.
  - b) the software that allows the user to communicate with the computer so that it operates in a user friendly way.
  - c) the hardware that allows the user to control the computer more easily.
  - d) the electronics that allows the keyboard to communicate with the computer and the printer.
  
2. The goal of most software written today is to be user friendly, meaning that:
  - a) when the computer is turned on, it immediately displays a cursor in the upper left hand corner of the CRT screen.
  - b) when the user makes an error, the hardware displays a red warning light.
  - c) the software can be easily used by individuals with limited training.
  - d) a "hello" prompt appears on the screen when the computer is turned on.

### PRACTICE TEST (continued)

3. Place a check mark beside the two items which are among the activities that occur when a user interfaces with a computer.

\_\_\_\_\_ A message requests verification of computer output.

\_\_\_\_\_ A message reports that processing is complete.

\_\_\_\_\_ A message reports on an error made by the user, and the user enters input to correct the error.

\_\_\_\_\_ A message reports the type of display and printer connected to the computer.

89

4. Absolute cursor movement:

- a) means the user can indicate the specific location on the screen where the cursor should be placed.
- b) is generally slower than relative cursor movement.
- c) is generally faster but requires output control devices to move the cursor.
- d) Both a and c are correct.

5. Write the names of three data and command entry devices in the spaces below.

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GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

### OBJECTIVES

- Define "menu", and illustrate various features, uses, advantages, and disadvantages of menus.
- Describe the role of graphics and the mouse in the user interface.
- Discuss the roles of command query language and natural language communication in a user interface.
- Identify the five issues that arise with respect to users.
- Describe five factors relevant to systems and procedures for user interface.

### TO COMPLETE LESSON 8B

- STEP 1      Read the major headings in the textbook, pages 7.10 through 7.20.
- STEP 2      Read pages 7.10 through 7.21, in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 8B on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 8B.
- STEP 5      Score the PRACTICE TEST for Lesson 8B.



### KEY CONCEPTS

#### PAGE NUMBER

PROMPT	7.11
MENU	7.12, 7.15
WRAPAROUND	7.14
SUBMENUS	7.14
DESKTOP SCREEN	7.16
PULL DOWN MENU	7.16
QUERY LANGUAGES	7.18
COMMAND QUERY LANGUAGE	7.18
NATURAL LANGUAGE COMMUNICATION	7.19
SYSTEM RESPONSES (TO THE USER)	7.20
RESPONSE TIME	7.21
SCREEN DESIGN	7.21
OPERATOR RESPONSES	7.21
ERROR RECOVERY	7.21
CONTROL AND SECURITY	7.21

### PRACTICE TEST

1. Which of the following is a disadvantage of menus?
  - a) Users do not need to remember names of special commands.
  - b) There are no standard ways for presenting options and having the user choose the desired selection.
  - c) A mouse is required in order to use a menu.
  - d) None of the above
  
2. A primary advantage in using a mouse for cursor control and data input is:
  - a) the user no longer has to use the keyboard to enter data.
  - b) it requires less space on the desk than other input devices.
  - c) it is easy to use.
  - d) both a and c.
  
3. List the two commonly found types of query languages below.

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**PRACTICE TEST (continued)**

4. Which item below is considered the most important user issue?
- a) What task the users want to accomplish
  - b) Who the users are
  - c) What information the users generate
  - d) All of these issues are of equal importance.
5. Place a check mark next to three factors relevant to systems and procedures for user interfaces.
- ☐ Error recovery
  - ☐ Screen design
  - ☐ Operator responses
  - ☐ Error correction
  - ☐ Passwords

## UNIT QUESTIONNAIRE

## LESSONS 8A - 8B

You have just finished Lessons 8A and 8B.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 7.22 and 7.23 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

94

### QUESTIONS

1. When a user interfaces with a computer, which of the following activities does NOT normally occur?
  - a) The user submits a command to perform an activity or request information.
  - b) A message reports on the software's reaction to the input entered by the user.
  - c) A message reports that processing is complete.
  - d) The computer displays the time of day on the CRT screen when the computer is turned on.

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSONS 8A - 8B

### QUESTIONS (continued)

2. The most commonly found hardware used to display messages to users is the:
  - a) keyboard.
  - b) CRT display monitor.
  - c) touch screen.
  - d) mouse.
  
3. While a number of different devices can be used to position the cursor on the screen, the cursor is positioned in one of two ways:
  - a) absolute cursor movement and direct cursor movement.
  - b) direct cursor movement and immediate cursor movement.
  - c) immediate cursor movement and relative cursor movement.
  - d) absolute cursor movement and relative cursor movement.
  
4. Pictures used to represent functions to be performed on a computer are called:
  - a) desktop screens.
  - b) icons.
  - c) pull down menus.
  - d) submenus.

### QUESTIONS (continued)

5. Touch screens are appropriate for:
- a) applications in which the end user must choose from a list of operations to be performed.
  - b) entering large amounts of data in a hurry because all prompts are on the screen.
  - c) drawing diagrams with your finger.
  - d) pointing to graphs and charts because graphs can be altered immediately with the touch of a finger.
6. A basic type of query language that uses preselected words which direct the software to perform a certain function is called:
- a) basic query language.
  - b) keyword query language.
  - c) command query language.
  - d) natural language processing.
7. The three elements of a good menu are:
- a) a title, a body, and a prompt.
  - b) a title, the selections, and a prompt.
  - c) the heading, the body, and the prompt.
  - d) the heading, the selections, and the closing.

## UNIT QUESTIONNAIRE

## LESSONS 8A - 8B

### QUESTIONS (continued)

8. System responses:
- a) are generated by the hardware when the computer is turned on.
  - b) are those messages and other actions taken by the computer when a user enters data into the computer.
  - c) represent the internal movement of data in main computer memory.
  - d) become important when selecting choices from a menu driven program.
9. In a well constructed menu, there should always be a selection that allows the user to:
- a) edit data that is entered.
  - b) make a choice using only a single keystroke.
  - c) exit from the menu being displayed.
  - d) make a selection using natural language.
10. With the advent of mouse technology, special menus have appeared. These are called:
- a) mouse menus.
  - b) pictorial menus.
  - c) pull down menus.
  - d) graphics menus.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 9, LESSON 9A

### OBJECTIVES

- Define the terms "bit" and "byte", and describe their use.
- Recognize and describe uses of the ASCII code.
- Identify and describe various features of main computer memory: size, addresses, storage, data manipulation, and usage.
- Recognize and describe uses of EBCDIC, and distinguish its representation of numeric and alphabetic data from ASCII.

### TO COMPLETE LESSON 9A

- STEP 1      Read the major headings in the textbook, pages 8.1 through 8.11.
- STEP 2      Read pages 8.1 through 8.12 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 9A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 9A.
- STEP 5      Score the PRACTICE TEST for Lesson 9A.



## MAIN COMPUTER MEMORY STORAGE

## LESSON 9A

### KEY CONCEPTS

#### PAGE NUMBER

MAIN COMPUTER MEMORY	8.1
CENTRAL PROCESSING UNIT	8.1
PROCESSOR UNIT	8.1
BIT (BINARY DIGIT)	8.1
BYTE	8.2
AMERICAN STANDARD CODE FOR INFORMATION INTERCHANGE (ASCII)	8.2
NUMERIC VALUES (IN ASCII, EBCDIC)	8.2, 8.10
PLACE VALUES	8.3
ALPHABETIC CHARACTERS (IN ASCII)	8.4
MEMORY ADDRESS	8.6
FIELD	8.7
EXTENDED BINARY CODED DECIMAL INTERCHANGE CODE (EBCDIC)	8.9
ZONE PORTION (OF THE BYTE)	8.9
DIGIT PORTION (OF THE BYTE)	8.9
ALPHABETIC DATA (IN EBCDIC)	8.10
NUMERIC VALUES (IN BINARY)	8.11
INTEGER	8.12

### PRACTICE TEST

1. A binary digit (bit) is:
  - a) the basic unit for storing data in main computer memory.
  - b) the same as a byte.
  - c) another name for a character stored in main computer memory.
  - d) two digits stored in main computer memory.
  
2. In ASCII code, what is the value of the left- most bit when representing numbers?
  - a) always 1
  - b) always 0
  - c) 0 or 1, depending on the exact number.
  - d) always 2

### PRACTICE TEST (continued)

3. For each diagram below, identify the ASCII number or letter represented by writing the number or letter in the appropriate blank.

Example: 

0	0	1	1	0	0	0	1
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
128	64	32	16	8	4	2	1

  1  

a) 

0	0	1	1	0	1	0	1
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
128	64	32	16	8	4	2	1

b) 

0	1	0	0	1	0	1	1
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
128	64	32	16	8	4	2	1

c) 

0	1	0	0	0	1	1	1
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
128	64	32	16	8	4	2	1

d) 

0	0	1	1	0	1	1	1
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
128	64	32	16	8	4	2	1

GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

4. For each diagram below, write the letter it represents in ASCII, AND write the decimal value of the letter. For example:

0	1	0	0	0	0	0	1
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
128	64	32	16	8	4	2	1

letter   decimal

  A         65 

letter   decimal

102

a)

0	1	0	1	1	0	1	0
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
128	64	32	16	8	4	2	1

\_\_\_\_\_

b)

0	1	0	0	0	0	1	0
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
128	64	32	16	8	4	2	1

\_\_\_\_\_

c)

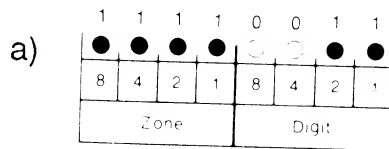
0	1	0	0	1	1	0	1
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
128	64	32	16	8	4	2	1

\_\_\_\_\_

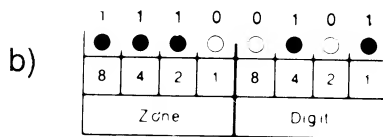
GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

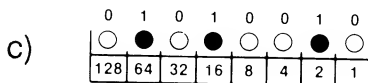
5. In the blank beside each byte diagram, write whether the particular representation is in ASCII or EBCDIC.



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

### OBJECTIVES

- Describe how a transistor works.
- Identify the four types of semiconductor memory and distinguish among them.
- Describe the functions of the two major components of the central processing unit.
- Name the components of a machine language instruction.
- Describe the steps involved in executing an instruction on a computer.

### TO COMPLETE LESSON 9B

- STEP 1      Read the major headings in the textbook, pages 8.12 through 8.18.
- STEP 2      Read pages 8.12 through 8.19, in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 9B on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 9B.
- STEP 5      Score the PRACTICE TEST for Lesson 9B.

## TYPES OF MEMORY

## LESSON 9B

### KEY CONCEPTS

#### PAGE NUMBER

MAGNETIC CORE MEMORY	8.12
SEMICONDUCTOR MEMORY	8.12, 8.18
TRANSISTORS	8.13
MICROSECONDS	8.13
NANOSECONDS	8.13
RAM (RANDOM ACCESS MEMORY)	8.13
ROM (READ ONLY MEMORY)	8.13
PROM (PROGRAMMABLE READ ONLY MEMORY)	8.13
EPROM (ERASABLE PROGRAMMABLE READ ONLY MEMORY)	8.13
ARITHMETIC/LOGIC UNIT	8.14
CONTROL UNIT	8.14
COMPUTER INSTRUCTIONS	8.14
MACHINE LANGUAGE INSTRUCTION	8.15
OPERATION CODE	8.15
INSTRUCTION REGISTER	8.15

### PRACTICE TEST

1. Match each type of memory to its description by placing the appropriate letter in each blank.

- a) RAM
- b) ROM
- c) PROM
- d) EPROM

\_\_\_\_\_ Data or programs stored here cannot be altered.

\_\_\_\_\_ An erasable form of memory where data can be stored prior to assembly with the computer.

\_\_\_\_\_ Where data can be placed into memory and extracted.

\_\_\_\_\_ Data is stored here by the user after the memory is manufactured, but prior to assembly with the computer.

106

2. A transistor functions by:

- a) always passing along a steady amount of electrical current.
- b) passing along varying amounts of electrical current.
- c) blocking electrical current or allowing it to pass.
- d) none of the above.

GO TO THE NEXT PAGE...



## TYPES OF MEMORY

## LESSON 9B

### PRACTICE TEST (continued)

3. The control unit:
  - a) directs and coordinates the activities of the entire computer.
  - b) is a part of the main computer memory.
  - c) controls auxiliary storage only.
  - d) contains the electronic circuitry necessary to perform arithmetic operations.
  
4. Which one of the following is a component of a machine language instruction?
  - a) The arithmetic/logic unit
  - b) The operation code
  - c) The control code
  - d) The memory storage code
  
5. When a machine language instruction is to be executed:
  - a) the arithmetic/logic unit fetches an instruction from main computer memory and places the instruction in an instruction register.
  - b) the control unit fetches an instruction from main computer memory and places the instruction in an instruction register.
  - c) the control unit fetches an instruction from auxiliary storage and places the instruction in an instruction register.
  - d) the arithmetic/logic unit fetches an instruction from auxiliary storage and places the instruction in an instruction register.

## UNIT QUESTIONNAIRE

## LESSONS 9A - 9B

You have just finished Lessons 9A and 9B.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 8.20 and 8.21 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

108

### QUESTIONS

1. One of the most commonly used coding schemes for mainframes is called Extended Binary Coded Decimal Interchange Code (EBCDIC). With EBCDIC:
  - a) each eight-bit byte is divided into two portions - the zone portion and the digit portion.
  - b) each seven-bit byte is divided into two portions - the zone portion and the digit portion.
  - c) each byte is composed of ten bits, but only eight of the bits are used.
  - d) each byte is composed of ten bits, and all ten bits are used.

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSONS 9A - 9B

### QUESTIONS (continued)

2. Data stored in main computer memory:
  - a) can be referenced by instructions in a computer program stored on auxiliary storage.
  - b) can be referenced and manipulated by computer instructions stored in main computer memory.
  - c) cannot be referenced by a computer program, but it can be referenced by the CPU.
  - d) is normally not accessible to either the CPU or the computer program.
  
3. The arithmetic/logic unit:
  - a) contains both the control unit and the processor unit.
  - b) is a part of main computer memory.
  - c) contains the electronic circuitry necessary to perform control operations.
  - d) contains the electronic circuitry necessary to perform arithmetic and logical operations.
  
4. PROM is similar to ROM except that:
  - a) the data is not placed in the memory when PROM is manufactured; instead, users can store data in the memory prior to assembling it with the computer.
  - b) data can be stored in PROM by a program stored in main computer memory, but data cannot be stored in ROM.
  - c) ROM can be used for storing input records which are going to be processed by a program stored in main computer memory, while input records cannot be stored in PROM.
  - d) PROM utilizes core memory, and ROM utilizes semiconductor memory.

### QUESTIONS (continued)

5. The size of main computer memory:
- a) may determine the type of printer that can be attached to the computer.
  - b) may determine what software can be run on the computer.
  - c) may determine if two disk drives can be attached to the computer.
  - d) may determine the type of hard disk that can be attached to the computer.
6. In general, a machine language instruction is composed of:
- a) an operation code only.
  - b) an operation code, the address of the instruction to be executed next, and the names of the fields to be processed.
  - c) an operation code and the names of the fields to be processed.
  - d) an operation code, values indicating the number of characters to be processed, and the addresses of the data to be used in the processing.
7. The type of memory used in virtually all computers is:
- a) magnetic core memory.
  - b) programmable read only memory.
  - c) semiconductor memory.
  - d) 8-bit memory.

## UNIT QUESTIONNAIRE

## LESSONS 9A - 9B

### QUESTIONS (continued)

8. Many computers use a combination of eight bits as a unit for storing data. These eight bits are called:
- a) a unit record.
  - b) a zone.
  - c) a word.
  - d) a byte.
9. The basic sequence of executing an instruction on a computer is:
- a) execute the instruction and place the result in ROM.
  - b) fetch the data, execute the instruction, and store the results in main computer memory.
  - c) fetch the instruction, execute the instruction, and store the results on auxiliary storage.
  - d) fetch the instruction, fetch the data, execute the instruction, and store the results in main computer memory.
10. A memory address:
- a) identifies each byte.
  - b) identifies each bit.
  - c) identifies each word.
  - d) identifies each field.

### OBJECTIVES

- Identify and describe auxiliary storage devices used with personal computers.
- Describe how data is stored on diskettes and fixed, hard drives.
- Distinguish between commonly used personal computer auxiliary storage devices on the basis of storage capacity and speed in accessing data.

### TO COMPLETE LESSON 10A

- STEP 1      Read the major headings in the textbook, pages 9.1 through 9.11.
- STEP 2      Read pages 9.1 through 9.11 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 10A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 10A.
- STEP 5      Score the PRACTICE TEST for Lesson 10A.

### KEY CONCEPTS

#### PAGE NUMBER

AUXILIARY STORAGE	9.1
DISKETTE OR FLOPPY DISK	9.1
TRACK	9.2
SINGLE-SIDED DRIVES	9.3
DOUBLE-SIDED DRIVES	9.3
RECORDING DENSITY	9.3
BITS PER INCH (BPI)	9.3
SINGLE DENSITY (SD)	9.3
DOUBLE DENSITY (DD)	9.3
DOUBLE TRACK DRIVES	9.4
TRACKS PER INCH	9.4
SECTORS	9.4
HARD-SECTORED DISKETTE	9.4
SOFT-SECTORED DISKETTE	9.5
FORMATTING A DISKETTE	9.5
ACCESS TIME	9.6
LATENCY	9.6
SETTLING TIME	9.6
DATA TRANSFER RATE	9.6
MICROFLOPPY DISKS	9.7
HARD DISK	9.7
WINCHESTER DISK	9.7
ACCESS ARMS	9.8
DISK CARTRIDGE	9.9
HALF-HEIGHT DRIVES	9.9
BACKUP COPY	9.10
STREAMING CARTRIDGE-TAPE DRIVE	9.10

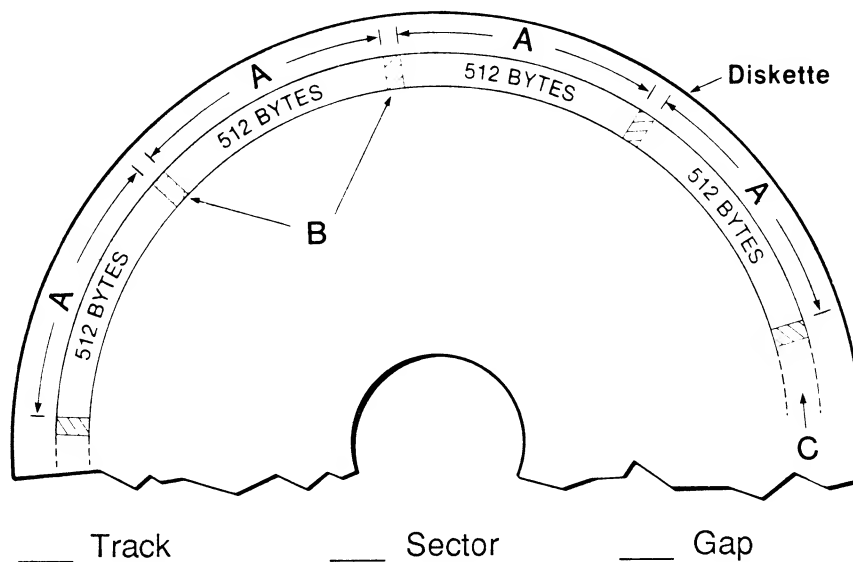
### PRACTICE TEST

1. In the early 1970's, IBM introduced a new medium for storing data consisting of thin plastic material enclosed in a square protective jacket. This new medium was called a:
  - a) magnetic cartridge.
  - b) fixed disk.
  - c) Winchester disk.
  - d) floppy disk.
  
2. The narrow recording band forming a full circle around the diskette is called a(n):
  - a) track.
  - b) sector.
  - c) cylinder.
  - d) interblock gap.
  
3. Which of the following statements is the best definition of the recording density of a diskette?
  - a) The number of bits that can be recorded on a diskette in a one-inch circumference on the outer-most track
  - b) The number of bits that can be recorded on a diskette in a one-inch circumference on the inner-most track
  - c) The number of bits that can be recorded on a diskette in one sector
  - d) The number of bits that can be recorded on a diskette in one track



**PRACTICE TEST (continued)**

4. Using the picture below, identify the components of a diskette by writing the letter of the component in the appropriate blank.



5. Hard disk drives for personal computers provide:
- a) about the same storage capacity and access time as floppy disks.
  - b) greater storage capacity than floppy disks but have slower data access time.
  - c) less storage capacity than floppy disks but have faster data access time.
  - d) greater storage capacity than floppy disks and have faster data access time.

**GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS**

### OBJECTIVES

- Identify and describe auxiliary storage devices used with large computers.
- Describe how data is stored on magnetic disk and magnetic tape.
- Explain the uses of tape storage with respect to personal computers and large computers.

116

### TO COMPLETE LESSON 10B

- STEP 1      Read the major headings in the textbook, pages 9.11 through 9.17.
- STEP 2      Read pages 9.11 through 9.17, in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 10B on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 10B.
- STEP 5      Score the PRACTICE TEST for Lesson 10B.

### KEY CONCEPTS

117

	<u>PAGE NUMBER</u>
DIRECT ACCESS STORAGE DEVICES (DASD)	9.11
RAMAC	9.11
REMOVABLE DISK PACK	9.11
DISK CARTRIDGES	9.12
FIXED DISKS	9.12
GIGABYTE	9.12
SECTOR METHOD	9.13
CYLINDER METHOD	9.13
MAGNETIC TAPE	9.13
CHANNELS	9.14
EBCDIC	9.14
TAPE DENSITY	9.14
SEQUENTIAL ORGANIZATION	9.16
INTERBLOCK GAP	9.16
BLOCKING	9.16
BUBBLE MEMORY	9.17
OPTICAL DISK SYSTEMS	9.17

### PRACTICE TEST

1. A magnetic disk is commonly referred to as a:
  - a) random retrieval storage device - RRSD.
  - b) sequential access storage device - SASD.
  - c) direct access storage device - DASD.
  - d) random access storage device - RASD.
  
2. When was magnetic tape first used for storing data?
  - a) In the early 1950's on one of the first Univac computers
  - b) In the late 1960's on the second generation of computers
  - c) In the mid-1970's on the third generation of computers
  - d) In the early-1980's on the first personal computers
  
3. The two coding structures used with magnetic tape are:
  - a) EBCDIC and DASD.
  - b) ASCII and DASD.
  - c) EBCDIC and DSDD.
  - d) EBCDIC and ASCII.

### PRACTICE TEST (continued)

4. For each of the auxiliary storage devices listed below, check those devices which would be appropriate to use with large computers (minicomputers or mainframes) and NOT personal computers.

- ☐ Magnetic disk
- ☐ Hard-sectored diskette
- ☐ RAMAC
- ☐ Floppy disk
- ☐ Half-height drive
- ☐ Removable disk pack
- ☐ Magnetic tape

119

5. With magnetic bubble memory, when the power to the computer is turned off:
- a) the contents of memory are lost.
  - b) the contents of memory are retained.
  - c) the results are unpredictable.
  - d) the contents of memory are retained, but cannot be loaded into main memory.

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

You have just finished Lessons 10A and 10B.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 9.18 and 9.19 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

120

### QUESTIONS

1. Magnetic disk devices for large computers can be divided into two broad categories:
  - a) hard disks and soft-sectored disks.
  - b) floppy disks and microfloppy disks.
  - c) removable disks and fixed disks.
  - d) fixed disks and hard-sectored disks.
  
2. Auxiliary storage, whether on small personal computers or large mainframe computers is used:
  - a) to store data temporarily while it is being processed.
  - b) to store data while it is not being processed.
  - c) to store data only when the main computer memory is not functioning properly.
  - d) to store only the results of arithmetic calculations.

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSONS 10A - 10B

### QUESTIONS (continued)

3. Why is an interblock gap used on magnetic tape?
  - a) To indicate the beginning of a tape.
  - b) To indicate the end of a tape.
  - c) To separate records in a file.
  - d) To separate files in a tape.
4. The three most important factors in determining the number of characters that can be stored on a diskette are:
  - a) the number of sides of the diskette used, the recording density of the bits on a track, and the number of tracks on the diskette.
  - b) the number of sides of the diskette used, the number of gaps between tracks, and the number of sectors per track on the diskette.
  - c) the settling time, the data transfer rate, and the speed of the access arms.
  - d) the settling time, speed of the access arms, and the rotation speed of the disk.
5. Tape density refers to:
  - a) the width of the tape.
  - b) the length of the tape.
  - c) the number of bits that can be stored per inch on the tape.
  - d) the number of bytes that can be stored per inch on the tape.

### QUESTIONS (continued)

6. The read/write heads contained on a hard disk for personal computers:
- a) float on a cushion of air and do not touch the surface of the disk.
  - b) touch the surface of the disk when writing data only.
  - c) touch the surface of the disk when reading data only.
  - d) touch the disk platter as the disk spins.
7. Which of the following is NOT a DASD?
- a) A fixed disk drive
  - b) A removable disk drive
  - c) A Winchester disk drive
  - d) A magnetic tape disk drive
8. Which of these devices can store large amounts of data and utilizes a laser reading and writing system?
- a) Streaming cartridge
  - b) Optical disk system
  - c) Bubble memory system
  - d) Disk cartridge



## UNIT QUESTIONNAIRE

## LESSONS 10A - 10B

### QUESTIONS (continued)

9. Records stored on magnetic tape can be retrieved:
- a) sequentially.
  - b) randomly.
  - c) sequentially and randomly.
  - d) only with the aid of an index.
10. The process of defining the number and size of sectors on a soft-sectored diskette is called:
- a) formatting a diskette.
  - b) creating the diskette index.
  - c) initializing the diskette variables.
  - d) mapping the diskette variables.

123

MAIL IN YOUR ANSWER CARD

GO TO UNIT 11, LESSON 11A

This concludes the overview of computer technology. Lessons 11, 12 and 13 will introduce you to Careers in Computers, Networking and Operating Systems. The corresponding textbook material will be found at various places throughout the book.

### OBJECTIVES

- Describe the hardware and software sectors of the computer industry.
- Identify and describe job and career opportunities available in information systems departments.
- Identify and describe job and career opportunities available in hardware manufacturers, software companies, service and supplies companies, retail computer stores, and educational institutions.

### TO COMPLETE LESSON 11A

STEP 1      Read the major headings in the textbook, pages 17.1 through 17.12.

STEP 2      Read pages 17.1 through 17.12 in the textbook.

STEP 3      Review KEY CONCEPTS for Lesson 11A on the next page of this study guide.

STEP 4      Take the PRACTICE TEST for Lesson 11A.

STEP 5      Score the PRACTICE TEST for Lesson 11A.

### KEY CONCEPTS

#### PAGE NUMBER

SERVICE BUREAUS	17.4
COMPUTER OPERATOR	17.6
TAPE AND DISK LIBRARIES	17.6
DATA ENTRY OPERATOR	17.6
CONTROL AND SCHEDULING PERSONNEL	17.6
DATABASE ADMINISTRATOR	17.6
SYSTEMS ANALYST	17.7
MANAGEMENT INFORMATION SYSTEMS	17.7
COMPUTER INFORMATION SYSTEMS	17.7
BUSINESS APPLICATION PROGRAMMERS	17.7
SYSTEMS PROGRAMMER	17.8
SCIENTIFIC PROGRAMMER	17.8
SYSTEMS ENGINEER	17.10

### PRACTICE TEST

1. In the early 1960's, the data processing industry consisted of the people and resources necessary to program and operate approximately\_\_\_\_\_ mainframe computers housed in centralized computer centers.
  - a) 100
  - b) 10,000
  - c) 100,000
  - d) 1,000,000
  
2. When computers first became commercially available:
  - a) computer software was not available.
  - b) computer hardware and software were sold separately.
  - c) computer hardware and software were packaged and sold as a unit.
  - d) computer software consisted mostly of game programs.

### PRACTICE TEST (continued)

3. List the five main groups that make up the information systems department in many companies and governmental agencies.

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_
- e) \_\_\_\_\_

### OBJECTIVES

- List the major areas of study appropriate for preparing for careers in the information processing industry.
- Discuss the roles of professional standards and certification in the information processing industry.

### TO COMPLETE LESSON 11B

- |               |  |
|---------------|--|
| <u>STEP 1</u> | Read the major headings in the textbook, pages 17.12 through 17.16.      |
| <u>STEP 2</u> | Read pages 17.12 through 17.16, in the textbook.                         |
| <u>STEP 3</u> | Review KEY CONCEPTS for Lesson 11B on the next page of this study guide. |
| <u>STEP 4</u> | Take the PRACTICE TEST for Lesson 11B.                                   |
| <u>STEP 5</u> | Score the PRACTICE TEST for Lesson 11B.                                  |

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
COMPUTER TECHNOLOGY	17.12
BUSINESS INFORMATION PROCESSING	17.12
COMPUTER SCIENCE	17.13
CERTIFICATE IN DATA PROCESSING EXAMINATION	17.15

### PRACTICE TEST

1. The three broad fields of study in the information processing industry are:
  - a) computer technology, business information processing, and computer science.
  - b) business information processing, educational processing, and scientific processing.
  - c) computer technology, engineering technology, and business information processing.
  - d) computer technology, business information processing, and robotics.
  
2. The Certificate in Data Processing Examination:
  - a) is required by several governmental agencies.
  - b) is administered by the Association of Information Systems Professionals.
  - c) is intended to test and certify the knowledge and skills of those in the computer profession.
  - d) is available to any person with three years of experience in the information processing industry.



## UNIT QUESTIONNAIRE

## LESSONS 11A - 11B

You have just finished Lessons 11A and 11B.

Before taking this unit questionnaire, read the "Summary" on page 17.16 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

131

### QUESTIONS

1. What professional organization created the Certificate in Data Processing Examination?
  - a) Association of Systems Management (ASM)
  - b) Association of Computer Processors (ACP)
  - c) Institute for Data Processing Professionals (IDPP)
  - d) Data Processing Management Association (DPMA)
  
2. Companies that provide computing resources and services for other companies are known as:
  - a) service bureaus.
  - b) resource bureaus.
  - c) time-sharing bureaus.
  - d) information processing bureaus.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

3. A computer operator:
  - a) keys in large volumes of data.
  - b) performs data editing.
  - c) runs the computer and checks that scheduled jobs are processed.
  - d) checks that tape and disk files are ready for processing.
  
4. System programmers are responsible for:
  - a) checking that scheduled jobs are run on the computer.
  - b) maintaining and making updates to the operating system.
  - c) supervising the work of business and scientific programmers.
  - d) designing new systems as required by the information processing department.
  
5. In 1969, one of the most important events in the computer industry was:
  - a) the release of microprocessor chips by Intel.
  - b) the availability of fourth generation computers.
  - c) the decision by IBM to sell hardware and software separately.
  - d) the release of the first electronic spreadsheet.

## UNIT QUESTIONNAIRE

## LESSONS 11A - 11B

### QUESTIONS (continued)

6. The first companies developing software for personal computers focused their efforts on:
  - a) game programs.
  - b) database programs.
  - c) scientific programs.
  - d) payroll and accounting programs.
  
7. A data entry operator is responsible for:
  - a) loading printers with paper.
  - b) keying in large volumes of data.
  - c) mounting magnetic tapes and disks.
  - d) scheduling computer time.
  
8. One of the first electronic spreadsheet programs for personal computers was called:
  - a) VisiCalc.
  - b) WordStar.
  - c) Multiplan.
  - d) Lotus 1-2-3.

### QUESTIONS (continued)

9. Control and scheduling personnel are responsible for:
  - a) reviewing all jobs that are processed overnight.
  - b) mounting magnetic tapes and disks.
  - c) maintaining the tape and disk libraries.
  - d) performing data editing using batch controls.
  
10. The systems analysis and design section of the information systems department is responsible for:
  - a) programming new applications.
  - b) controlling and scheduling telecommunication networks.
  - c) defining and developing new application systems.
  - d) checking that jobs are processed on the computer system.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 12, LESSON 12A

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### OBJECTIVES

- Specify the hardware and software necessary for a personal computer to be a part of data communications system.
- Identify and distinguish between the three categories of modems for personal computers: external, direct connect modems, internal modems, and acoustic couplers.
- Identify and describe the basic components of a data communications system for connecting a small computer (or terminal) to a large host computer.

### TO COMPLETE LESSON 12A

135

STEP 1      Read the major headings in the textbook, pages 11.1 through 11.11.

STEP 2      Read pages 11.1 through 11.11 in the textbook.

STEP 3      Review KEY CONCEPTS for Lesson 12A on the next page of this study guide.

STEP 4      Take the PRACTICE TEST for Lesson 12A.

STEP 5      Score the PRACTICE TEST for Lesson 12A.

### KEY CONCEPTS

#### PAGE NUMBER

136

DATA COMMUNICATIONS	11.1
DOWNLOADING	11.4
UPLOADING	11.4
COMMUNICATIONS ADAPTER	11.4
PARALLEL TRANSMISSION	11.4
SERIAL TRANSMISSION	11.4
SERIAL INTERFACE OR PORT	11.5
RS-232C INTERFACE	11.5
MODEM	11.5
EXTERNAL, DIRECT CONNECT MODEM	11.5
INTERNAL MODEM	11.5
ACOUSTIC COUPLER	11.5
INTELLIGENT OR SMART MODEM	11.6
COMMUNICATION CHANNEL	11.7
MICROWAVE STATION	11.7
EARTH STATION	11.8
COMMUNICATION SATELLITE	11.8
ASYNCHRONOUS TRANSMISSION	11.9
SYNCHRONOUS TRANSMISSION	11.9
SIMPLEX CHANNEL	11.9
HALF-DUPLEX CHANNEL	11.10
FULL DUPLEX CHANNEL	11.10
COMMUNICATIONS CONTROL UNIT	11.11
FRONT-END PROCESSOR	11.11

### PRACTICE TEST

1. What are the basic components of a data communications system that allows access from a personal computer to a large host computer? (Place a checkmark next to the components in such a system.)

- ☐ Personal computer
- ☐ Modem for a personal computer
- ☐ Transceiver
- ☐ Communications channel
- ☐ Optical scanner
- ☐ Modem for a host computer
- ☐ Host computer

2. What device converts digital data, generated by a computer, into analog signals that can be sent over communication channels?

- a) A communications adapter
- b) A portable computer
- c) A host computer
- d) A modem



### PRACTICE TEST (continued)

3. Synchronous transmission refers to:
- a) several modems transmitting and receiving data at the same time.
  - b) a character being sent through a communication line preceded by a start bit and followed by a stop bit.
  - c) a character being sent through a communication line as part of a group of characters without start-stop bits.
  - d) the process of checking for errors in data at the same time that transmission is occurring.

138

4. List the three basic ways that data can be transmitted over a communications channel.

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

### OBJECTIVES

- Identify and describe the two major line configurations for connecting a computer terminal, personal computer, or large computer to a host computer or to one another.
- State examples of types of communication channels suitable for small computer to large computer communications and large computer to large computer communications.

### TO COMPLETE LESSON 12B

- STEP 1      Read the major headings in the textbook, pages 11.11 through 11.15.
- STEP 2      Read pages 11.11 through 11.15, in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 12B on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 12B.
- STEP 5      Score the PRACTICE TEST for Lesson 12B.

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
COAXIAL CABLE	11.12
FIBER OPTICS	11.12
LINE CONFIGURATIONS	11.13
POINT-TO-POINT LINE	11.13
LEASED LINE	11.13
SWITCHED LINE	11.13
MULTIDROP OR MULTIPOINT LINE	11.14
POLLING	11.15
ADDRESSING	11.15

### PRACTICE TEST

1. Name 6 examples of communication channels:

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_
- e) \_\_\_\_\_
- f) \_\_\_\_\_

141

2. The two major data transmission line configurations are:

- a) point-to-point lines and multidrop lines.
- b) single terminal and multi-terminal lines.
- c) direct lines and indirect lines.
- d) multidrop and multipoint lines.

3. A point-to-point line may be one of two types:

- a) switched or conditioned.
- b) conditioned or leased.
- c) leased or switched.
- d) voice or switched.

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

### OBJECTIVES

- Identify and distinguish between a star network and a ring network.
- Identify and describe the components of a local area network.
- List and describe three important applications of local area networks.
- Describe the different types of transmission media for local area networks, the means for transmitting along the media, and the two major types of network access.

142

### TO COMPLETE LESSON 12C

- |               |  |
|---------------|--|
| <u>STEP 1</u> | Read the major headings in the textbook, pages 11.15 through 11.23.      |
| <u>STEP 2</u> | Read pages 11.15 through 11.23, in the textbook.                         |
| <u>STEP 3</u> | Review KEY CONCEPTS for Lesson 12C on the next page of this study guide. |
| <u>STEP 4</u> | Take the PRACTICE TEST for Lesson 12C.                                   |
| <u>STEP 5</u> | Score the PRACTICE TEST for Lesson 12C.                                  |

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
NETWORK	11.15
STAR NETWORK	11.15
RING NETWORK	11.16
VALUE ADDED NETWORKS	11.17
PACKET SWITCHING	11.17
COMMUNICATIONS PROTOCOL	11.17
PUBLIC BULLETIN BOARDS	11.19
LOCAL AREA NETWORK	11.19
HARDWARE RESOURCE SHARING	11.19
WORKSTATION	11.20
CONTROL UNIT	11.20
INFORMATION RESOURCE SHARING	11.20
ELECTRONIC MAIL	11.20
NETWORK TYPOLOGY	11.20
BUS TYPOLOGY	11.20
RING TYPOLOGY	11.21
STAR TYPOLOGY	11.21
TWISTED PAIR WIRE	11.21
COAXIAL CABLE	11.22
BASEBAND	11.22
TIME-DIVISION MULTIPLEXING	11.22
BROADBAND	11.22
NETWORK ACCESS	11.23
CARRIER SENSED MULTIPLE ACCESS (CSMA)	11.23
COLLISION	11.23
TOKEN PASSING	11.23

### PRACTICE TEST

1. The type of network that allows multiple terminals to communicate with a single, centralized computer is a:

- a) star network.
- b) ring network.
- c) cluster network.
- d) circle network.

2. Name 3 applications of local area networks:

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

## UNIT QUESTIONNAIRE

## LESSONS 12A - 12C

You have just finished Lessons 12A and 12C.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 11.24 and 11.25 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

### QUESTIONS

145

1. A data communications network that is already established and can be used by anyone subscribing to the service is called a:
  - a) data subscription network.
  - b) service bureau network.
  - c) value added network.
  - d) community shared network.
  
2. In order for digital data to be transmitted over telephone lines, the data must be converted to:
  - a) analog signals.
  - b) bytes with start-stop bits.
  - c) synchronous signals.
  - d) asynchronous signals.

GO TO THE NEXT PAGE...





## COMPULIT - Unit 12

### UNIT QUESTIONNAIRE

### LESSONS 12A - 12C

#### QUESTIONS

3. A line which is established through a regular voice telephone network is called:
  - a) a voice line.
  - b) pre-dialed line.
  - c) leased line.
  - d) switched line.
  
4. A modem capable of controlling functions such as automatic dialing and answering of calls are known as a(n):
  - a) automatic modem.
  - b) intelligent or smart modem.
  - c) sophisticated modem.
  - d) microprocessor-controlled modem.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

5. A communications protocol is a formal set of rules governing:
- a) the format and relative timing of message exchanges between two communicating devices.
  - b) the type of personal computer or terminal that may be connected to a multidrop line.
  - c) the length of time allowed each user to the central processing unit.
  - d) all permanent circuits connecting a personal computer or terminal to a large host computer.
6. Transferring data from files on a personal computer (or terminal) to a large host computer is called:
- a) bulk transmission
  - b) parallel transmission.
  - c) uploading.
  - d) downloading.
7. An acoustic coupler is used:
- a) to convert asynchronous signals to synchronous signals.
  - b) only for large computer to satellite communication.
  - c) exclusively for communication between large computers and microwave stations.
  - d) with a standard telephone headset to convert digital signals to audible tones.

## UNIT QUESTIONNAIRE

## LESSONS 12A - 12C

### QUESTIONS (continued)

8. What is it called when two terminals attempt to send data at the same time on a bus network using carrier sensed multiple access?
- a) An intersection
  - b) A token passing
  - c) A collision
  - d) A carrier conflict
9. The three most widely used local network topologies are:
- a) bus, ring, and cluster.
  - b) star, bus, and cluster.
  - c) circle, star, and bus.
  - d) bus, ring, and star.
10. A multidrop line is often used with:
- a) inquiry systems with multiple terminals with each user requiring the line for short periods of time.
  - b) inquiry systems with multiple terminals with each user requiring the line for long periods of time.
  - c) systems using batch methods to transmit large volumes of data.
  - d) systems using interactive methods to transmit large volumes of data.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 13, LESSON 13A

# COMPULIT - Unit 13

## OPERATING SYSTEMS



### IMPORTANT:

After you complete this lesson, your systems software will be shipped to you. If you have recently moved, it is very important that you contact the school about your new address.

## LESSON 13A

### OBJECTIVES

- Define and describe the role of systems software and an operating system.
- Identify and distinguish between commonly used operating systems.
- Give examples of general types of utility programs.
- Define multitasking.
- Describe the function of a compiler.

### TO COMPLETE LESSON 13A

149

- STEP 1      Read the major headings in the textbook, pages 14.1 through 14.8.
- STEP 2      Read pages 14.1 through 14.8 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 13A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 13A.
- STEP 5      Score the PRACTICE TEST for Lesson 13A.

## OPERATING SYSTEMS

## LESSON 13A

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
SYSTEMS SOFTWARE	14.1
OPERATING SYSTEM	14.1
BOOTING OR STARTING UP	14.1
RESOURCE MANAGEMENT	14.1
SUPERVISOR	14.2
RESIDENT COMMANDS	14.2
TRANSIENT COMMANDS	14.2
OPERATING SYSTEM PROMPT	14.2
BATCH FILE	14.3
UTILITY FUNCTIONS	14.3
FILES MANAGEMENT	14.3
SYSTEM DATE AND SYSTEM TIME	14.3
DIRECTORY	14.4
MACHINE LANGUAGE	14.4
BASIC INTERPRETER	14.4
CP/M	14.5
APPLEDOS	14.5
APPLE PRODOS	14.5
MS-DOS OR PC-DOS	14.5
UNIX	14.5
CONCURRENT PROGRAMMING	14.6
MULTITASKING OR MULTIPROGRAMMING	14.6
INTERRUPT	14.6
COMPILER	14.6
OBJECT PROGRAM	14.6
MEMORY MANAGEMENT	14.8
VIRTUAL STORAGE SYSTEMS	14.8

### PRACTICE TEST

1. List the three main functions of systems software and operating systems:

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

2. Place a check mark next to the major elements of an operating system:

- \_\_\_\_\_ Supervisor
- \_\_\_\_\_ System date
- \_\_\_\_\_ Resident commands
- \_\_\_\_\_ CP/M
- \_\_\_\_\_ Transient commands
- \_\_\_\_\_ ROM

## UNIT QUESTIONNAIRE

## LESSON 13A

You have just finished Lesson 13A.

### INSTRUCTIONS

- STEP 1 Take an answer card from the pocket at the back of the notebook.
- STEP 2 Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3 Take your unit questionnaire.

152

### QUESTIONS

1. Most operating systems are divided into three major sections:
  - a) supervisor, resident commands, and transient commands.
  - b) resident commands, transient commands, prompting commands.
  - c) supervisor, resident commands, prompting commands.
  - d) supervisor, transient commands, prompting commands.
2. The resident commands portion of memory is reserved for instructions that:
  - a) perform rarely used functions.
  - b) perform frequently used functions.
  - c) perform all utility functions.
  - d) communicate all error messages to the user.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

3. The transient commands portion of memory is reserved for instructions that:
  - a) perform rarely used functions.
  - b) perform frequently used functions.
  - c) perform all utility functions.
  - d) communicate all error messages to the user.
  
4. What is it called when two or more operating commands can be read and executed independently of a computer operator or user?
  - a) A chain file
  - b) An independent file
  - c) A batch file
  - d) Multitasking
  
5. The central processing unit that actually executes instructions is only capable of understanding:
  - a) BASIC source statements.
  - b) low level programming languages.
  - c) high level programming languages.
  - d. machine language.



## UNIT QUESTIONNAIRE

## LESSON 13A

### QUESTIONS (continued)

6. The first operating system developed for personal computers was called:
- a) AppleDOS
  - b) TRSDOS
  - c) CP/M
  - d) MS-DOS
7. Which of the following is NOT considered an element of systems software?
- a) Programs that start up the computer
  - b) Programs that create data bases
  - c) Programs that perform utility functions
  - d) Programs that store and retrieve files
8. The program that translates program statements into machine language is called:
- a) a translator.
  - b) a utility program.
  - c) a language checker.
  - d) a compiler.

### QUESTIONS (continued)

9. The operating system chosen for use with the IBM Personal Computer was:
- a) CP/M.
  - b) MS-DOS
  - c) Unix.
  - d) P-system.
10. When the operating system is loaded into the computer from auxiliary storage:
- a) a portion of main computer memory is used.
  - b) a portion of ROM is used.
  - c) the instructions are read directly into the CPU.
  - d) the instructions are read directly into the arithmetic and logic unit.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 14, LESSON 14A

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### ANSWERS TO PRACTICE TEST

1. **C**

If you missed this question, go back and review page 1.4 in the textbook.

2. **C** CRT  
**B** Processor Unit  
**A** Keyboard

If you missed this question, go back and review page 1.6 in the textbook.

3. **B**

If you missed this question, go back and review page 1.6 in the textbook.

4. **D**

If you missed this question, go back and review page 1.1 in the textbook.

5. **hardware** central processing unit  
**software** computer program  
**software** electronic spreadsheet  
**hardware** cathode ray tube

If you missed this question, go back and review pages 1.6 through 1.8 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review page 1.24 in the textbook.

2. **D**

If you missed this question, go back and review page 1.19 in the textbook.

3. **C**

If you missed this question, go back and review page 1.16 in the textbook.

**A2**

4. **A**

If you missed this question, go back and review page 1.22 in the textbook.

5. **B**

If you missed this question, go back and review pages 1.31 through 1.33 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review page 2.2 in the textbook.

2. **second generation** transistor

If you missed this question, go back and review page 2.10 in the textbook.

**third generation** System/360

If you missed this question, go back and review page 2.12 in the textbook.

**first generation** ENIAC

If you missed this question, go back and review page 2.3 in the textbook.

**A3**

3. **B** stored program concept

If you missed this question, go back and review pages 2.3 in the textbook.

**A** ENIAC

If you missed this question, go back and review pages 2.3 in the textbook.

**C** time-sharing

If you missed this question, go back and review pages 2.14 in the textbook.

4. **D**

If you missed this question, go back and review page 2.9 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **C**

If you missed this question, go back and review page 2.16 in the textbook.

2. **B**

If you missed this question, go back and review pages 2.19 in the textbook.

3. ☒ **Ability to rapidly retrieve data stored electronically**  
☐ **CAD/CAM**  
☒ **Word processing**  
☒ **Administrative and decisions support systems through access to spreadsheet and graphic software**  
☐ **Computer literacy for all employees**

**A4**

If you missed this question, go back and review page 2.27 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **A**

If you missed this question, go back and review page 3.1 in the textbook.

2. **B**

If you missed this question, go back and review page 3.3 in the textbook.

3. **D**

If you missed this question, go back and review page 3.3 in the textbook.

**A5**

4. **B**

If you missed this question, go back and review page 3.4 in the textbook.



### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review page 3.4 in the textbook.

2. **A**

If you missed this question, go back and review page 3.4 in the textbook.

**A6**

3. **C**

If you missed this question, go back and review page 3.4 in the textbook.

4. **B**

If you missed this question, go back and review page 3.7 in the textbook.

5. **B**

If you missed this question, go back and review page 3.7 in the textbook.

6. **A**

If you missed this question, go back and review page 3.10 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **C**

If you missed this question, go back and review page 3.12 in the textbook.

2. **DELETE**      remove a name from a database  
**CHANGE**      correct data that is incorrect  
**ADD**            enter a new record

If you missed this question, go back and review pages 3.12 through 3.15 in the textbook.

3. **B**

If you missed this question, go back and review page 3.12 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review page 4.2 in the textbook.

2. **C**

If you missed this question, go back and review pages 4.2 and 4.4 in the textbook.

**A8**

3. batch  
transaction-oriented  
interactive

Credit card charges  
Car rentals  
Obtaining a bank account  
balance  
Payroll processing

batch

If you missed this question, go back and review pages 4.2 through 4.6 in the textbook.

4. **A**

If you missed this question, go back and review page 4.3 in the textbook.

### ANSWERS TO PRACTICE TEST

1. You should have placed check marks beside the following terms:

**Data management**  
**Data security and control**  
**Data integrity**  
**Availability**

If you missed this question, go back and review pages 4.8 through 4.10 in the textbook.

2. **B**

If you missed this question, go back and review pages 4.8 and 4.9 in the textbook.

**A9**

3. **C**      procedure  
**E**      reliable data entry  
**B**      computer user  
**D**      system  
**A**      personnel

If you missed this question, go back and review pages 4.9 through 4.11 in the textbook.

4. **C**

If you missed this question, go back and review page 4.11 in the textbook.

### ANSWERS TO PRACTICE TEST

1. C

If you missed this question, go back and review page 4.12 in the textbook.

2. B

If you missed this question, go back and review page 4.12 in the textbook.

3. D

If you missed this question, go back and review page 4.18 in the textbook.

A10

4. 3 Alphabetizing a list of names  
6 Composing a letter  
5 Checking inventory to fill an order  
2 Creating electricity billing statements for many customers

If you missed this question, go back and review pages 4.12 through 4.18 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **D**

If you missed this question, go back and review pages 5.1 and 5.2 in the textbook.

2. **B**

If you missed this question, go back and review pages 5.2 and 5.3 in the textbook.

3. limited function terminals (dumb terminals)  
smart terminals  
intelligent terminals (programmable terminals)

**A11**

Any order for these three is correct.

If you missed this question, go back and review pages 5.5 through 5.7 in the textbook.

4. **C**

If you missed this question, go back and review pages 5.8 and 5.9 in the textbook.

5. ☐ Color display terminals  
☒ **Keyboard/printer terminals**  
☐ Reverse video terminals  
☒ **Integrated workstations**

If you missed this question, go back and review pages 5.12 and 5.13 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **D**

If you missed this question, go back and review page 5.17 in the textbook.

2. **A**

If you missed this question, go back and review pages 5.18 through 5.20 in the textbook.

3. **A**

If you missed this question, go back and review pages 5.20 through 5.24 in the textbook.

### **ANSWERS TO PRACTICE TEST**

1. **D**

If you missed this question, go back and review pages 5.24 through 5.27 in the textbook.

2. **C**

If you missed this question, go back and review page 5.26 in the textbook.

3. **A**

If you missed this question, go back and review page 5.26 in the textbook.

**A13**

4. **C**

If you missed this question, go back and review page 5.27 in the textbook.





### ANSWERS TO PRACTICE TEST

1. **A**

If you missed this question, go back and review page 6.2 in the textbook.

2. **B**

If you missed this question, go back and review pages 6.3 through 6.9 in the textbook.

3. **D**

If you missed this question, go back and review page 6.10 in the textbook.

4. **A**

If you missed this question, go back and review page 6.13 in the textbook.

5. ☒ **The quality of print**  
☐ The computer to be used  
☒ **The speed of printing**  
☒ **The type of paper feed mechanism**  
☐ The size of the printer  
☒ **Cost**

If you missed this question, go back and review pages 6.3 and 6.10 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **C**

If you missed this question, go back and review page 6.16 in the textbook.

2. **B**

If you missed this question, go back and review page 6.16 in the textbook.

3. **B**

If you missed this question, go back and review pages 6.19 and 6.20 in the textbook.

**A15**

4. ☒ **Plotters**  
☒ **Computer output microfilm**  
☐ Computer-assisted retrieval device  
☒ **Voice synthesizer**  
☐ Liquid crystal output device

If you missed this question, go back and review pages 6.22 through 6.25 in the textbook.

5. **A**

If you missed this question, go back and review pages 6.23 and 6.24 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **A**

If you missed this question, go back and review page 7.1 in the textbook.

2. **C**

If you missed this question, go back and review page 7.2 in the textbook.

3.    \_\_\_    A message requests verification of computer output.  
       $\sqrt{\quad}$     **A message reports that processing is complete.**  
       $\sqrt{\quad}$     **A message reports on an error made by the user, and the user enters input to correct the error.**  
      \_\_\_    A message reports the type of display and printer connected to the computer.

If you missed this question, go back and review page 7.2 in the textbook.

4. **A**

If you missed this question, go back and review page 7.3 in the textbook.

5. You should have listed any three of the following four items (in any order):

**Keyboards    Mouse    Touch screen    Voice input**

If you missed this question, go back and review pages 7.5 through 7.9 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review pages 7.12 through 7.15 in the textbook.

2. **C**

If you missed this question, go back and review page 7.15 in the textbook.

3. You should have listed:

**Command query language**  
**Natural language communication**

If you missed this question, go back and review pages 7.18 through 7.20 in the textbook.

4. **B**

If you missed this question, go back and review page 7.20 in the textbook.

5. ☒ **Error recovery**  
☒ **Screen design**  
☒ **Operator responses**  
☐ Error correction  
☐ Passwords

If you missed this question, go back and review pages 7.20 and 7.21 in the textbook.

## MAIN COMPUTER MEMORY STORAGE

## LESSON 9A

### ANSWERS TO PRACTICE TEST

1. **A**

If you missed this question, go back and review pages 8.1 and 8.2 in the textbook.

2. **B**

If you missed this question, go back and review page 8.2 in the textbook.

3. a) 5

b) K

c) G

d) Z

**A18**

If you missed this question, go back and review pages 8.3 and 8.4 in the textbook.

4.                      letter                      decimal

a)                      Z                      90

b)                      B                      66

c)                      M                      77

If you missed this question, go back and review pages 8.2 through 8.4 in the textbook.

5. a) EBCDIC  
b) EBCDIC  
c) ASCII

If you missed this question, go back and review pages 8.2

## TYPES OF MEMORY

## LESSON 9B

### ANSWERS TO PRACTICE TEST

1. **B** Data or programs stored here cannot be altered.
- D** An erasable form of memory where data can be stored prior to assembly with the computer.
- A** Where data can be placed into memory and extracted.
- C** Data is stored here by the user after the memory is manufactured, but prior to assembly with the computer.

If you missed this question, go back and review pages 8.13 and 8.14 in the textbook.

2. **C**

If you missed this question, go back and review page 8.13 in the textbook.

3. **A**

If you missed this question, go back and review page 8.14 in the textbook.

4. **B**

If you missed this question, go back and review pages 8.14 and 8.15 in the textbook.

5. **B**

If you missed this question, go back and review pages 8.15 and 8.16 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **D**

If you missed this question, go back and review pages 9.1 in the textbook.

2. **A**

If you missed this question, go back and review page 9.2 in the textbook.

3. **B**

If you missed this question, go back and review page 9.3 in the textbook.

**A20**

4. **C** Track **A** Sector **B** Gap

If you missed this question, go back and review pages 9.2 through 9.4 in the textbook.

5. **D**

If you missed this question, go back and review pages 9.8 and 9.9 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **C**

If you missed this question, go back and review page 9.11 in the textbook.

2. **A**

If you missed this question, go back and review page 9.13 in the textbook.

3. **D**

If you missed this question, go back and review page 9.14 in the textbook.

4. ☒ **Magnetic disk**

☐ Hard-sectored diskette

☒ **RAMAC**

☐ Floppy disk

☐ Half-height drive

☒ **Removable disk pack**

☒ **Magnetic tape**

If you missed this question, go back and review pages 9.11 through 9.16 in the textbook.

5. **B**

If you missed this question, go back and review page 9.17 in the textbook.



### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review pages 17.1 in the textbook.

2. **C**

If you missed this question, go back and review page 17.2 in the textbook.

**A22**

3. a) **Operations**  
b) **Data Administration**  
c) **Systems Analysis and Design**  
d) **Programming**  
e) **Information Center**

Any order for these five answers is correct.

If you missed this question, go back and review pages 17.5 through 17.8 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **A**

If you missed this question, go back and review pages 17.12 and 17.13 in the textbook.

2. **C**

If you missed this question, go back and review pages 17.15 and 17.16 in the textbook.

### ANSWERS TO PRACTICE TEST

1. ☒ **Personal computer**  
☒ **Modem for a personal computer**  
☐ **Transceiver**  
☒ **Communications channel**  
☐ **Optical scanner**  
☒ **Modem for a host computer**  
☒ **Host computer**

**A24**

If you missed this question, go back and review pages 11.2 and 11.3 in the textbook.

2. **D**

If you missed this question, go back and review page 11.5 in the textbook.

3. **C**

If you missed this question, go back and review page 11.9 in the textbook.

4.
  - a) Telephone Lines
  - b) Microwave Radio Signals
  - c) Satellite Transmissions

Any order of these three is correct.

If you missed this question, go back and review page 11.6 in the textbook.

### **ANSWERS TO PRACTICE TEST**

1.   a)     **telephone wires**  
      b)     **microwave stations**  
      c)     **earth stations**  
      d)     **satellites**  
      e)     **coaxial cables**  
      f)     **fiber optics**

Any order of these six answers is correct.

If you missed this question, go back and review pages 11.7, 11.8, 11.12 and 11.13 in the textbook.

**A25**

2.   **A**

If you missed this question, go back and review page 11.13 in the textbook.

3.   **C**

If you missed this question, go back and review page 11.13 in the textbook.

### **ANSWERS TO PRACTICE TEST**

1. **A**

If you missed this question, go back and review page 11.15 in the textbook.

2. a) **Hardware resource sharing**  
b) **Information resource sharing**  
c) **Electronic Mail**

Any order of these three answers is correct.

**A26**

If you missed this question, go back and review pages 11.19 and 11.20 in the textbook.

### ANSWERS TO PRACTICE TEST

1.
  - a) **Starting-up computer operations (Booting)**
  - b) **Interfacing with users**
  - c) **Resource management**

If you missed this question, go back and review page 14.1 in the textbook.

2. 

<input checked="" type="checkbox"/>	<b>Supervisor</b>
<input type="checkbox"/>	System date
<input checked="" type="checkbox"/>	<b>Resident commands</b>
<input type="checkbox"/>	CP/M
<input checked="" type="checkbox"/>	<b>Transient commands</b>
<input type="checkbox"/>	ROM

If you missed this question, go back and review pages 14.2 through 14.4 in the textbook.

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## **TUTORIAL DISK INFORMATION**

We have included a Tutorial Disk for your information. The program, "Computer Tutorial", is interactive, you will find information on how to start the program on the disk label. "Computer Tutorial" is provided as a reference only, you will not be tested or required to submit any questionnaires. If you have studied COMPULIT diligently, you are already familiar with much of the material on the disk. You can use the program as a refresher of the material covered in Volume I, but also as an introduction to some new concepts such as advanced DOS commands and hard disk procedures.



## SUPERCALC3

*This quick reference guide includes SuperCalc3 commands covered in Compulit course material. It is not a substitute for your COMPULIT textbook. For more detailed explanations see Appendix pages A1 to A109*

[data] means a number or word which you type in this position.  
DO NOT TYPE "[ " OR "]"

<key> means to type the key with this name on it  
DO NOT TYPE "< " OR "> "

**boldfaced** commands to type

### Syntax Notation

---

[filename] the name you wish to call your spreadsheet

[column] one column or range of columns

[row] one row or range of rows

[format] one of the following display format options:

\$	two decimal spaces
Un	display in the format of user-defined format n
R	numbers display right justified
L	numbers display left justified
TR	text display right justified
TL	text display left justified
TC	text display centered
0-127	column width for global or column format
D	return to default formats (same as /FGRTL9)

<Enter> press <enter> key (also called "Carriage Return")

[cell] one cell entry

[range] a range of cells

[device] one of the following devices to display a spreadsheet

P	printer
C	screen
D	disk, (you will be requested to give a filename other than the name of the spreadsheet)



### Commands

---

<b>=</b> [cell]	go to a specific cell
<b>/B</b> [cell]	blank the specific cell, or <b>&lt;Enter&gt;</b> for current cell
<b>/B</b> [range]	blank a range of cells
<b>/C</b> [cell1] <b>&lt;Enter&gt;</b> [cell2]	copy data from cell1 to cell2
<b>/C</b> [range] <b>&lt;Enter&gt;</b> [cell1]	copy a range of data to a block starts with cell1
<b>/FG</b> [format]	format the whole spreadsheet with a specific format
<b>/FC</b> [column] [format]	format a column or columns of data in a specific format
<b>/FR</b> [row] [format]	format a row or rows of data in a specific format
<b>/FD</b>	define features in user-defined format table
<b>/GF</b>	toggle to display formula used in a spreadsheet on/off
<b>/GB</b>	toggle to display spreadsheet border on/off
<b>/I</b> [row]	insert a row or a range of rows
<b>/I</b> [column]	insert a column or a range of columns
<b>/L</b> [filename]	All load a spreadsheet
<b>/M</b> [cell1] [cell2]	move data from cell1 to cell2
<b>/M</b> [range] <b>&lt;Enter&gt;</b> [cell1]	move a range of data to the block starts with cell1
<b>/OAll&lt;Enter&gt;</b> [device]	display the entire spreadsheet to a device
<b>/O</b> [range] <b>&lt;Enter&gt;</b> [device]	display part of a spreadsheet to a device
<b>/QY</b>	quit and return to DOS
<b>/QN</b>	do not quit SuperCalc3
<b>/R</b> [cell1] [cell2]	copy formula from cell1 to cell2
<b>/R</b> [cell1] [range]	copy formula from cell1 to a range of cells
<b>/S</b> [filename] <b>&lt;Enter&gt;</b>	All save a new spreadsheet
<b>/S</b> [filename]O	All save an edited spreadsheet and write over the previous version
<b>/TH</b>	locks the current and above rows
<b>/TV</b>	locks the current column and the ones left to it
<b>/TB</b>	locks the current row and column and any data above or left to them
<b>/TC</b>	clear the locks
<b>/Z</b>	zap the worksheet, make sure that you save the file before zapping

When you need help with editing, press **<?>**

## WORDSTAR

---

*This quick reference guide includes all the Wordstar commands covered in Compulit course material. It is not a substitute for your COMPULIT textbook. For more detailed explanations of these commands, see Appendix pages C1 to C82.*

<b>^</b>	hold the <b>Ctrl</b> key and type in the command
<b>[data]</b>	means a number or word which you type in this position. DO NOT TYPE " [ " OR " ] "
<b>&lt;key&gt;</b>	means to type the key with this name on it. DO NOT TYPE " < " OR " > "
<b>boldfaced</b>	commands to type

### Opening Menu

---

<b>F</b>	toggle file directory on/off
<b>H</b>	set help level
<b>D</b>	open a file for creation or editing
<b>P</b>	toggle to print/stop printing an existing file
<b>E</b>	rename a file
<b>Y</b>	delete a file
<b>X</b>	exit to MS-DOS

### Main Menu

---

<b>&lt;F1&gt;</b>	set help level
<b>&lt;F2&gt;</b>	indent current line
<b>&lt;F3&gt;</b>	set left margin
<b>&lt;F4&gt;</b>	set right margin
<b>&lt;F5&gt;</b>	set underline print control character
<b>&lt;F6&gt;</b>	set boldface print control character
<b>&lt;F7&gt;</b>	beginning of the block to move/write/read
<b>&lt;F8&gt;</b>	end of the block to move/write/read
<b>&lt;F9&gt;</b>	go to the beginning of the file
<b>&lt;F10&gt;</b>	go to the end of the file
<b>&lt;Ins&gt;</b>	toggle insert mode on/off

## WORDSTAR

---

<Enter>	insert a new line
<Home>	go to beginning of the first line of current screen
<End>	go to beginning of the last line of current screen
<PgUp>	move to previous screen of text
<PgDn>	move to next screen of text
<=>	tab
<↑>	move cursor up one line
<↓>	move cursor down one line
<←>	move cursor one character to the left
<→>	move cursor one character to the right
^S	move cursor one character to the left (same as ←)
^D	move cursor one character to the right (same as →)
^A	move cursor one word to the left
^F	move cursor one word to the right
^E	move cursor up one line (same as ↑)
^X	move cursor down one line (same as ↓)
^G	delete one character where the cursor is
<Del>	delete one character to the left of the cursor
^T	delete one word to the right of the cursor
^Y	delete current line
^I	tab (same as =>)
^B	reform
^J	go to help menu
^V	toggle insert mode on/off (same as <Del>)
^N	insert a new line (same as <Enter>)
^U	stop a command
^O	go to onscreen menu
^Q	go to quick menu
^K	go to block menu
<space bar>	return to main menu from quick, block, or onscreen menu

## WORDSTAR

### Combined Commands

---

(commands with more than one menu applied)

<b>^KS</b>	save and return to the file
<b>^KD</b>	save and return to opening menu
<b>^KX</b>	save and return to DOS
<b>^KQ</b>	ignore all the changes and return to opening menu
<b>^KB</b>	beginning of the block to move/write/read
<b>^KK</b>	end of the block to move/write/read
<b>^KV</b>	move the block
<b>^KH</b>	highlight and display the moved block
<b>^KR</b>	read the marked block
<b>^KW</b>	write the marked block to disk
<b>^QR</b>	go to the beginning of the file (same as <F9>)
<b>^QC</b>	go to the end of the file (same as <F10>)
<b>^QS</b>	move cursor to left end of the current line
<b>^QD</b>	move cursor to right end of the current line
<b>^QF</b>	find/replace
<b>^QY</b>	delete all characters on the current line to the right of the cursor
<b>^Q&lt;Del&gt;</b>	delete all characters on the current line to the left of the cursor
<b>^OL</b>	set left margin (same as <F3>)
<b>^OR</b>	set right margin (same as <F4>)
<b>^OC</b>	center current line
<b>^OS</b>	set line spacing
<b>^OJ</b>	toggle right justification on/off
<b>^OW</b>	toggle word wrap option on/off
<b>^OD</b>	toggle display of printer control characters on/off
<b>^PS</b>	set underline printer control character (same as <F5>)
<b>^PB</b>	set boldface printer control character (same as <F6>)

# ***COMPULIT QUICK REFERENCE***



## ***WORDSTAR***

---

<b><i>^LB</i></b>	proceed backward with find/replace operation
<b><i>^LW</i></b>	use only whole word
<b><i>^LU</i></b>	ignore upper or lower case
<b><i>^LN</i></b>	replace without asking
<b><i>^LG</i></b>	replace in the entire file

### **Dot Commands**

---

(should be typed in from column 1 with opening menu)

<b><i>.MTnn</i></b>	set beginning line on print page to nn
<b><i>.OP</i></b>	omit page number

## *dBASE III*

*This quick command reference guide includes the dBASE commands covered in COMPULIT course material. It is not a substitute for your COMPULIT textbook. For more detailed explanations of these commands, see Appendix pages B1 to B104.*

[data]	means a number or word which you type in this position. DO NOT TYPE "[ " OR "]"
<key>	means to type the key with this name on it DO NOT TYPE "<" OR ">"
<b>boldfaced</b>	commands to type

### Syntax Notation

[filename]	database file name
[f_name]	name of a field in database file
[s_filename]	file name of a sorted database file
[r_filename]	name of a database report
[command]	any dBASE command
[r_number]	record number
[cond]	user-specified condition on a field
[drive]	disk drive specification
<Enter>	press <enter>

### Commands

#### *Creating and Saving Commands*

<b>set default to</b> [drive]	change default drive, usually applied when using a data diskette
<b>create</b> [filename]	create a dBASE file
<b>use</b>	save dBASE files
<b>use</b> [filename]	load a dBASE file to modify

### *Editing Commands*

<code>edit</code>	edit from the current record, press <esc> to exit
<code>edit [r_number]</code>	edit from a specific record, press <esc> to exit
<code>append</code>	add record to the end of the active dBASE file
<code>goto [r_number]&lt;Enter&gt; insert</code>	insert a new record immediately after the current record
<code>change for [cond]</code>	edit the records which meet a condition
<code>goto [r_number]&lt;Enter&gt; browse</code>	display all the records starting from the current record
<code>delete for [cond]</code>	delete the records which meet a condition
<code>set delete on</code>	make the deleted records be invisible while listed
<code>recall for [cond]</code>	make the deleted records which meet the condition become part of the file again (this only works before the deletion is packed)
<code>pack</code>	permanently remove records from a file

### *Display Commands*

<code>display all</code>	display all records in a file
<code>display all to print</code>	print all records in a file
<code>list</code>	display all records in a file (same as <code>display all</code> )
<code>list to print</code>	print all records in a file (same as <code>display all to print</code> )
<code>dir</code>	list all dBASE files stored on the default drive
<code>dir [drive]</code>	list all dBASE files stored on a specific drive
<code>goto top</code>	go to record 1
<code>goto bottom</code>	go to the last record
<code>goto [r_number]</code>	go to a specific record
<code>display</code>	display the current record

## *dBASE III*

**display record** [r\_number]

display a specific record

**display next** n

display the current active record plus additional records, which will display n records all together

**display structure**

display the structure (definition) of a file

**modify structure**

redefine the structure of a file

**display all off**

display records without record number

**display all** [f\_name 1],..., [f\_name n]

display specific fields of all records in a file

**display for** [cond]

display the records which meet the specified condition

**display off for** [cond]

display the records which meet the specified condition without record number

**display for** [cond 1] .and....  
.and. [cond n]

display the records which meet all the specified conditions

**display for** [cond 1]  
.or. ... .or. [cond n]

display the records which meet any of the specified conditions

**display all for .not.** [cond]

display the records which don't meet the specified condition

**display all** [f\_name 1],...,  
[f\_name n] **for** [cond 1] .and. ...  
.and. [cond n]

display the specific fields of the records which meet all the conditions

**display all** [f\_name 1],...,  
[f\_name n] **for** [cond 1]  
.or. ... .or. [cond n]

display the specific fields of the records which meet any of the conditions

### *Field Calculation Commands*

**count**

total number of records in the active dBASE file

**count for** [cond]

number of records which meet a certain condition

**sum** [f\_name]

total of a numeric field

**sum** [f\_name] **for** [cond]

sum of a numerical field of the records which meet a specific condition

**average** [f\_name]

average of a numeric field



**average** [f\_name] **for** [cond]

average of a numeric field of the records which meet a specific condition

### **Sorting Commands**

**sort to** [s\_filename] **on** [f\_name]

rearrange the records by using a specific field as the key, then store the sorted file under [s\_filename]

**sort to** [s\_filename] **on**  
[f\_name 1], ..., [f\_name n]

rearrange the records by using more than one field as the key, then store the sorted file under [s\_filename]

### **Report Creation Commands**

**create report** [r\_filename]

create a report file and store it under [r\_filename]

**report form** [r\_filename] **for**  
[cond] **to print**

print out records from a report file which meet a condition

**modify report** [r\_filename]

rearrange report format

### **Miscellaneous**

**quit**

save and close all dBASE files, then exit to DOS

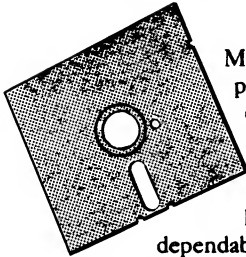
**<F1> or help**

go to help menu

**help** <command>

go to the help screen for <command>

## The Care and Feeding of a Floppy Disk Drive



Many, if not most, problems with floppy disk drives stem from improper disk and drive handling. Although disk drives have become quite dependable, they are precision electromechanical devices, requiring the special care you devote to similar devices, such as your stereo turntable. The following list offers some simple but helpful tips to ensure a longer life for your disk drive.

### Do's and Don'ts

- Store your disks in sleeves when not using them. Dust, fingerprints, and even particles of cigarette smoke can obstruct the disk drive head. Most disks come with a sleeve made of Tyvek, an antistatic material that prevents accidental data loss.

- Don't bend the disk. Bent 5 1/4-inch floppies often turn irregularly or not at all, making data storage and retrieval unreliable. The 3 1/2-inch disks come in hard-plastic cases and cannot be bent easily.

- When placing the disk in the drive, don't insert it quickly or forcefully. If it catches on something, investigate before applying more force and possibly bending the disk.

- Close the drive door carefully; don't slam it shut. Doing so causes excessive pressure on the disk and drive heads and could result in premature wear and failure.

- Don't touch the exposed area of the disk, particularly the area that shows through the drive-head access slot. Fingerprints can affect reading and writing to the disk. Because they are sticky, fingerprints are especially difficult for the disk liner to remove. Touching the exposed area of the disk also can cause "physical data erasure" (scratching), which can permanently destroy information and disable the disk.

Again, the 3 1/2-inch disk has overcome this problem. It comes with a spring-loaded cover for the drive-head access slot, which keeps the slot covered when the disk isn't in the drive. If the access-slot cover on a 3 1/2-inch disk isn't working properly, replace the disk.

- Don't store or use the disk in areas with a high concentration of airborne dust and debris, and don't allow anyone to smoke near disks or computers. Smoke particles can interfere with reading and writing disk information.

- Don't leave disks near sources of strong magnetic fields, including CRTs, motors, high-voltage AC wires, and X-rays similar to those found at airport security gates. Magnetic fields can wipe out or reduce the strength of magnetic information on a disk. Research has shown that storing magnetic media on top of a CRT reduces the strength of the data slightly—not enough to affect performance significantly, but why risk it? Give your data the best chance to survive.

**D**on't store or use the disk in areas with a high concentration of airborne dust and debris.

- Most disk manufacturers recommend storing disks at 50–125 degrees Fahrenheit. For best performance, you should let your disks reach room temperature—nominally 75 degrees—before using them in your system. Never expose disks to sources of direct heat or sunlight. This can cause the disks to warp or melt.

- Don't flip your floppy. Many users of single-sided drives cut a second write-protect notch in the opposite side of the disk and flip it over to use the other side. This is a bad practice. The jacket liner collects oxide particles, dust, and other debris. When you flip over the disk, you reverse the direction of rotation, causing the debris that the liner had collected to be swept back onto the disk surface.

### Shop Around

The floppy disks you buy should contain reinforcement rings. These rings strengthen the mylar around the drive spindle hole. Without reinforcement, the drive spindle repeatedly clamps onto the disk, often mutilating the mylar and causing disk read-write problems.

Although reinforcement rings once were uncommon or optional, they now come standard on most disks—except some bargain brands. Reinforcement

rings add little to the cost or complexity of a disk, but they can save you some major frustrations.

Purchasing write-protect tabs also makes your life easier. Write-protect tabs are the little stickers that cover the write-protect notch on 5 1/4-inch disks. Two common types are reflective silver and reflective gold; a third type is black.

Although the type of write-protect tab you use might seem irrelevant, experience shows otherwise. In most floppy disk drives, a light source on one side of the write-protect notch shines through the notch to a light detector on the other side. If the notch is blocked by a write-protect tab of any kind, the light cannot get through and the drive is protected.

Some floppy drives, particularly those supplied in certain Compaq models, work differently. These drives assume that a write-protect tab is installed only when the tab reflects light. Users who buy non-reflective black tabs find—often the hard way—that their disks aren't write-protected.

It's safer to use reflective write-protect tabs, though in most cases the black tabs should also work. You might want to experiment to determine if your system works properly with non-reflective tabs before placing them on your disks.

### Move It but Don't Lose It

When transporting disk drives or systems containing disk drives, make sure the disk read-write heads are protected. Hard-disk heads should be "parked" before moving them to protect both the heads and the media.

When moving a floppy drive, place a protective insert in the drive and close the drive door. This protects the drive from excessive vibration and keeps the heads on dual-headed drives from bumping into each other.

Disk-drive inserts are commonly packaged with new drives and with new computers containing floppy drives; be sure to save them. If you don't have a protective disk-drive insert, you can use a spare disk as a substitute—one that you don't plan to use for data storage, since scratching might occur. Using a cardboard disk-drive insert is better than using a disk, because it's slightly thicker and absorbs shocks better than the disk's mylar. Nonetheless, a disk provides much better protection than none at all. □

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## How to Set Up Your Computer System

Page 1

### 1. System Equipment—3 boxes

All boxes are shipped out together, however delivery might take place at different times.

#### ONE BOX CONTAINING

- Computer
- Keyboard (cable attached)
- MS-DOS Manual (Floppy disks included)
- GW BASIC Manual (Floppy disks included)
- Power cord (connects computer to household power outlet)
- Video Cable (connects computer to the monitor)

#### A SECOND BOX CONTAINING

- Video Monitor (power cord attached)
- User's Manual

#### A THIRD BOX CONTAINING

- Printer (power cord attached)
- Printer Cable (connects printer to computer)
- User's Manual

### 2. Location

- Choose a clean and quiet location with ample workspace to set up your computer system. Allow for enough room for workspace and materials such as computer paper, books, disks, etc.
- Keep your computer away from exposure to heat, moisture or excessive dirt or dust.
- Choose a location close to a grounded, three-prong electrical outlet to connect your system.
- Always operate your computer in a clean environment. Dust, heat and moisture are your computer's worst enemies!

### 3. Unpacking Your Equipment

- Carefully unpack all contents
- **Save Shipping Containers and Packing Material**
- Inspect for Damage  
If there is visible damage contact the carrier (UPS, US Postal Service, etc.) for directions. Advise NTS Student Services in writing.



## How to Set Up Your Computer System

Page 2

### 4. Connecting Your System

Your computer system consists of the following pieces of hardware:

Monitor  
Computer  
Keyboard  
Printer

To connect these components, refer to Figure 1 on page four.

(NOTE: all connections are made to the **back** of the computer, monitor and printer)

- 1) Place monitor on top of computer and connect both with monitor cable (See Fig. 1).
- 2) Place keyboard in front of computer and connect to back of computer (See Fig. 1).
- 3) Place printer to the side of the computer and connect it to the computer with the printer cable (See Fig. 1).
- 4) Connect computer, printer and monitor to an AC outlet (AC Distribution Block with surge protection recommended). See Fig. 2.
- 5) Please refer to your Printer Manual for additional setup instructions **before** you turn your printer on. You may have to remove a protective tube from your printer before you can operate it.

### 5. Initial Operation

#### MONITOR

- Press the on/off switch to the on position (printer and computer are off!)
- Rotate the bottom control on the right side of the monitor 3/4 of a turn clockwise until you observe a green display split by a bright horizontal line. Note: This **bright line is natural** when there is no information from the computer, especially when it is turned off.

#### COMPUTER



- **IMPORTANT!!** Remove the cardboard protectors from the disk drives and save them for future use when moving the computer.



## How to Set Up Your Computer System

Page 3

### 5. Initial Operation (cont.)

- Switch the power switch to the "ON" position. The picture should stabilize and text will appear on the screen while the computer is going through an initial self-check. At the end of the check, the computer will direct you to "Insert Diskette in Drive A. Press any key."
- In the back of the Microsoft User's Guide you will find an envelope packet. In this packet there are two disks:  
Disk 1 — The Operating System Disk which may be titled "Program Disk".  
Disk 2 — the Supplemental Programs Disk
- Remove the **PROGRAM DISK** (Disk 1 of 2) from its envelope and insert in the upper disk drive (Drive A), turn the disk pivot lock and press the "Enter" key on your keyboard. You will observe that the red indicator light on Drive A is illuminated, indicating that the contents of the disk are being loaded into memory.

#### IMPORTANT:



**NEVER** REMOVE YOUR DISK FROM THE DRIVE WHILE THE RED LIGHT IS ON. YOU WILL DAMAGE YOUR DISK DRIVE IF YOU DO.



**NEVER** FORMAT ANY SYSTEMS OR PROGRAM DISKETTES. FORMATING WILL ERASE ALL CONTENT. FORMAT EMPTY DISKS ONLY.

- Next, the computer will display a message and ask you to enter the date. Type the date and press "Enter". Now the computer will ask you to enter the time. Type the time and press "Enter". You need to enter the date and time exactly as the computer shows you. For example: 10-5-87 and 9:45:00.

(Note: Entering the date and time each time you start up your computer is helpful because it means that all of your files will be date and time stamped. However, if you are in a hurry, just press return twice and the computer will take you to the next step.

As soon as you have done this, an "A>" (or "A prompt") will appear on the screen to indicate the computer is waiting for your commands. This is also an indication that you have "booted" (or started) the system up. The computer is ready for use.





## How to Set Up Your Computer System

Page 4

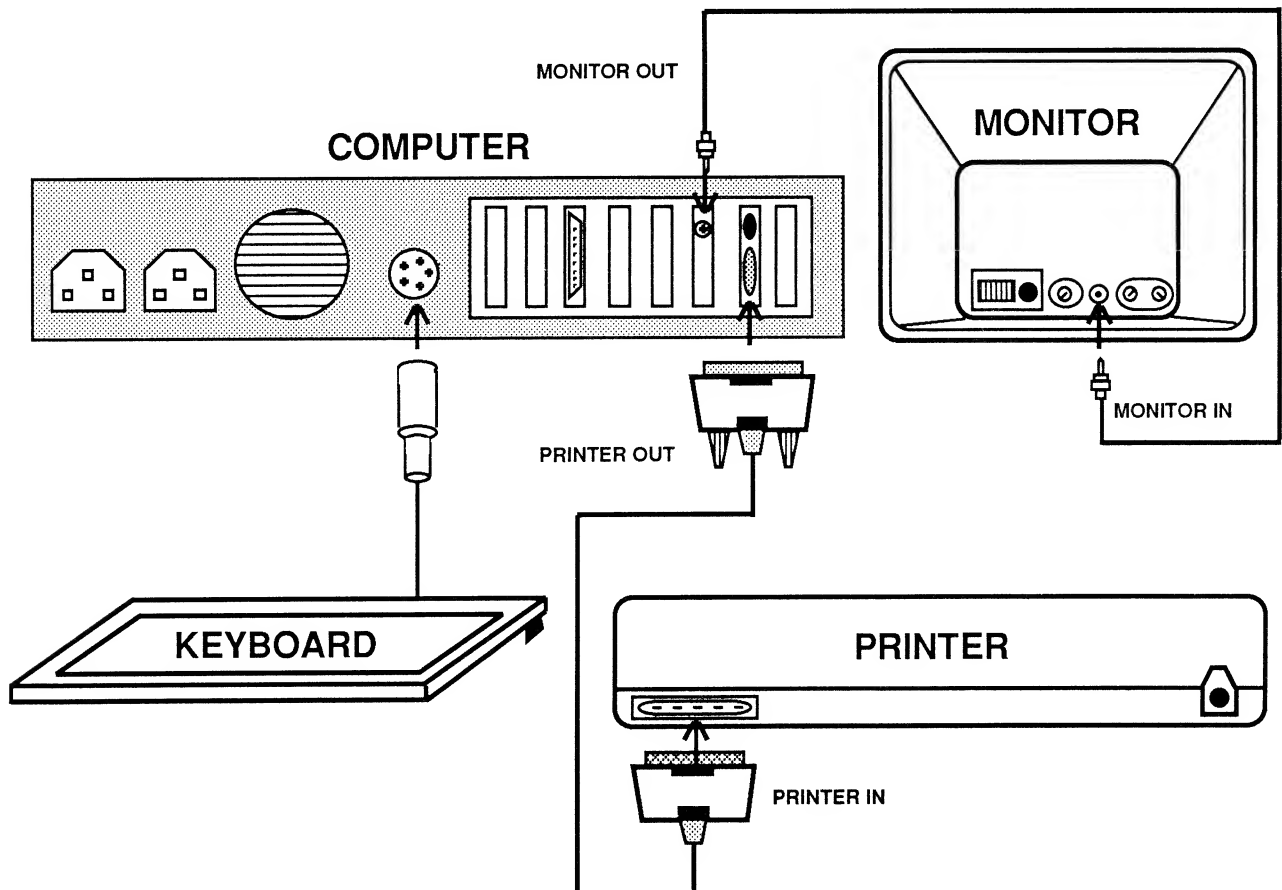
### 5. Warranty Information

NTS will guarantee all computer equipment for one year from the date of shipping. Contact NTS Student Services for instructions in the event of an equipment failure during the warranty period. After the warranty period, all NTS furnished equipment can be serviced by local technicians in your area.



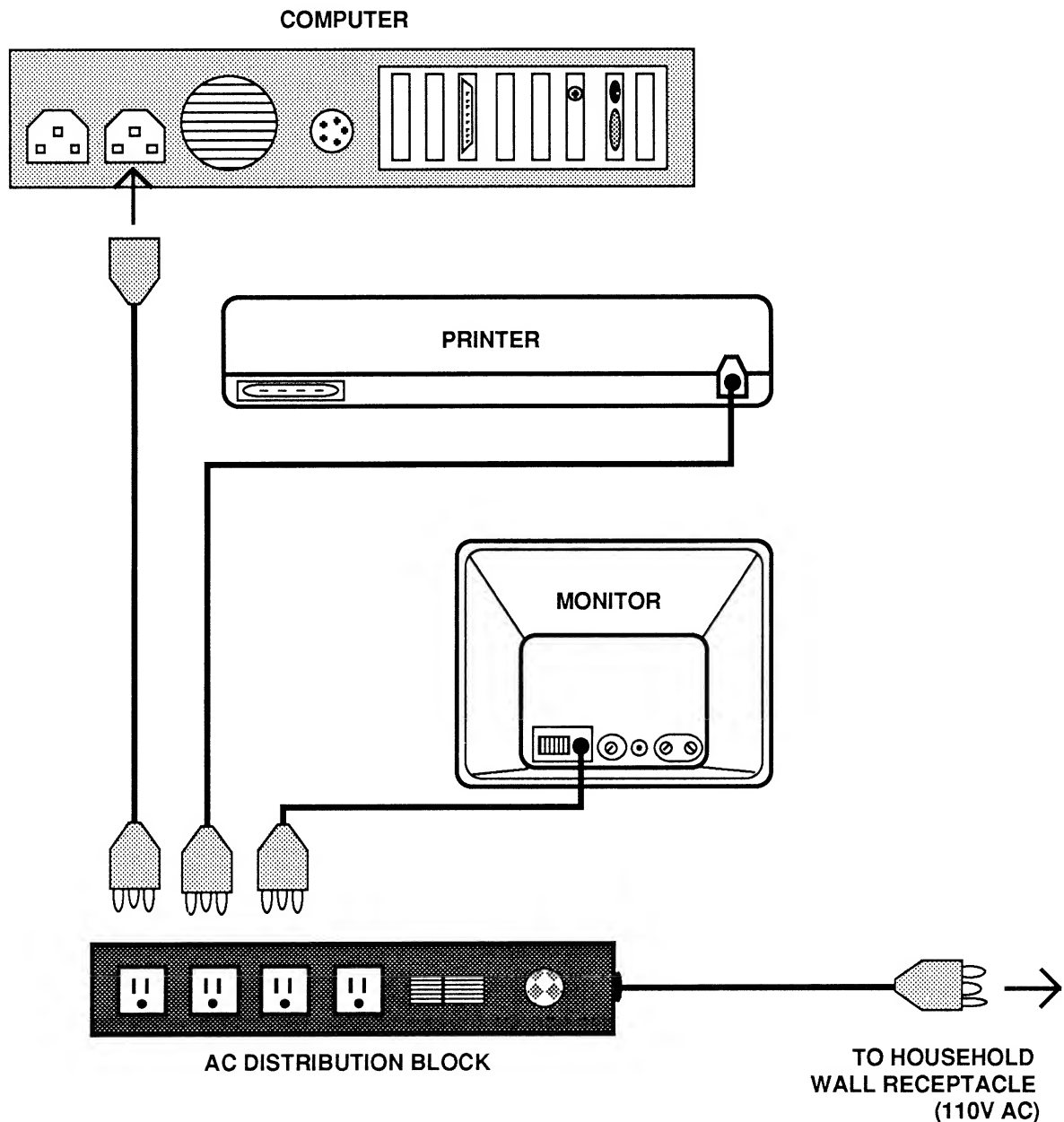
**IMPORTANT:** Your computer will work properly only with licensed, commercially available software. NTS will not guarantee proper operation when using "boot-legged" or otherwise illegally obtained software.

**Figure 1 — Monitor, Printer and Keyboard**





**Figure 2 — AC Power Connections**



NOTE: We recommend that you purchase an AC Distribution Block with surge protection at your local electronic or hardware store.



### OBJECTIVES

- Set up your computer by unpacking it and connecting the various components together.
- Set up your printer by connecting it to your computer.
- Operate your printer by loading it with paper and running a check test.
- Identify the parts of your computer.
- Describe the proper way to handle floppy disks.
- Identify the differences between typing and computing.

### TO COMPLETE LESSON 14A

VOL II  
1

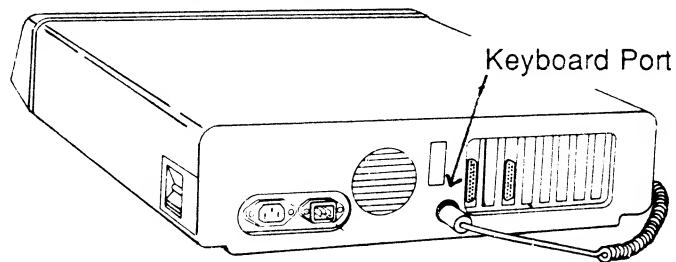
- |               |  |
|---------------|--|
| <u>STEP 1</u> | Read SET-UP INSTRUCTIONS on the next page of this study guide.   |
| <u>STEP 2</u> | Read the set-up instructions of your NTS near-letter-quality printer and execute the instructions presented. |
| <u>STEP 3</u> | Read SYSTEM COMPONENTS in this lesson of the study guide.  |
| <u>STEP 4</u> | Read HANDLING FLOPPY DISKS in this lesson of the study guide.  |
| <u>STEP 5</u> | Read USING THE KEYBOARD in this lesson of the study guide.   |
| <u>STEP 6</u> | Take the PRACTICE TEST for Lesson 14A.   |
| <u>STEP 7</u> | Score the PRACTICE TEST for Lesson 14A.  |

### SET-UP INSTRUCTIONS

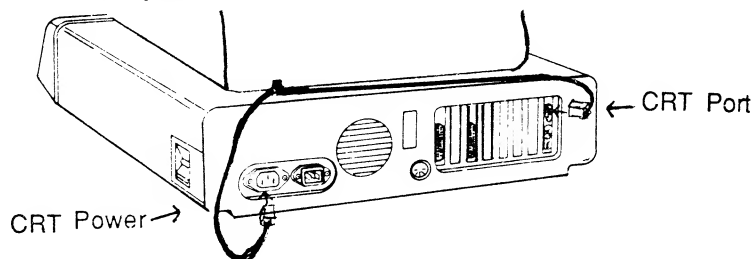
STEP 1      Unpack each box and identify the following:

Processor Unit  
Display or CRT  
Keyboard  
Printer  
MS-DOS documentation (you will also have  
documentation on some of your  
hardware components)

STEP 2      Plug the keyboard into the processor unit. The back of your processor system might be slightly different from the picture below. Plug your keyboard into the round port.



STEP 3      Plug the CRT into the processor unit. Make sure that the CRT is plugged into a power supply as well as the port on the system.



STEP 4      Plug the power cord into the wall outlet.

*If your system differs from the schematic above, connect monitor and power cable to the appropriate outlets.*

### LOADING MS-DOS (continued)

#### Procedure: How to Load MS-DOS?

##### STEP 3

Turn your computer on. If your monitor has a separate on/off switch, turn your monitor on.

The numbers that appear on the screen indicate the computer is running a memory check.

Notice the A drive read/write light goes on when the computer is accessing the information on the disk.

**WARNING:** Never remove a disk from a drive if it's read/write light is on. Removing it may cause data loss on the disk.

The following message appears on your display:

**Current date is Tue 1-01-1980  
Enter new date (mm-dd-yy):**

##### STEP 4

Type in the current date using the format provided. For example if the date is June 1, 1987, you type 06-01-87. Use the number keys at the top of the keyboard, and do not have any spaces between the numbers or the dashes.



### LOADING MS-DOS (continued)

#### Procedure: How to Load MS-DOS?

STEP 5 Press the Enter key,

The following (or similar) message appears on your display:

**Current time is 0:00:45:10  
Enter new time :**

STEP 6 Type in the current time according to a 24 hour clock. For example if the current time is 8:00 am type 8:00. If the time is 4:00 pm, type 16:00. You can type in hours, minutes, seconds, and hundreds of a second. It is suggested that you just type in the hour followed by a colon, followed by the minutes.

*Reminder: As on a typewriter, press the shift key as you press the colon (:) key.*

STEP 7 Press the Enter key,

You now have the MS-DOS prompt, A>, appearing on the screen and you are ready to begin your next task.

The prompt tells you that you are in DOS and that you are currently accessing the A drive.

The flashing line following the prompt is called the cursor.

GO TO THE NEXT PAGE

### INSTRUCTIONS: VIEWING FILES (continued)

#### Procedure: How to view a directory?

STEP 4      Insert the GW-Basic disk into the B drive and close the drive door.

STEP 5      Type **B:**

**NOTE:** It is important that you type the colon (:) (shift-semicolon) after the letter B. This tells the computer to switch to the B drive.

STEP 6      Press the Enter key.

The MS-DOS prompt changes to B>

STEP 7      At the MS-DOS prompt, B>, type **dir**

STEP 8      Press the Enter key.

The file names of the disk in the B drive are displayed.

VOL II  
17

#### About the DIR command

The DIR (DIRectory) command will display the contents of the disk in the whatever drive is specified in the prompt. In the previous instructions you saw that by changing the prompt you could access disks in either drive.

The DIR command is a resident (or internal memory) command. It is available whenever you have a DOS prompt (either A> or B>).

Now let's see how to view a directory without changing the prompt.

GO TO THE NEXT PAGE

### INSTRUCTIONS: VIEWING FILES (continued)

#### Procedure: How to view a directory?

STEP 9 At the MS-DOS prompt, B>, Type **dir a:**  
*NOTE: Again, don't forget the colon (:) after the letter.*

STEP 10 Press the Enter key.  
  
The file names of the disk in the A drive are displayed. Again notice the read/write light goes on whenever you access information on the disk.

STEP 11 At the MS-DOS prompt, B>, type **dir b:**

STEP 12 Press the Enter key.  
  
The file names of the disk in the B drive are displayed.

In the previous procedure you practiced:

- how to switch the prompt from A> to B> and back to A>
- how to view a disk directory on either drive regardless of the prompt.

#### More about the DIR command

Below are several examples of how to work with the DIR command.

<u>Command</u>	<u>Result</u>
A> <b>dir b:</b> Enter key	view contents of disk in B drive
B> <b>DIR A:</b> Enter key	view contents of disk in A drive
B> <b>dir a:/w</b> Enter key	view contents of disk in A drive in a wide view
A> <b>dir b:/p</b> Enter key	view contents of disk in B drive page by page (press ENTER to view the next page)

GO TO THE NEXT PAGE

### INSTRUCTIONS: VIEWING FILES (continued)

#### About file names

File names are made up of two parts.

The first part is a name that is unique to all other names in that same directory (this allows MS-DOS to find one file from another). While some software applications will allow you to create a filename with more than eight characters, MS-DOS will display only the first eight characters.

The second part (called the extension) is often used to denote what software application is associated with the file (for example BASIC uses the extension BAS and MS-DOS uses the extension COM). Extensions are three or less characters long.

Other pieces of information are displayed when you view a directory. These are:

- size of the file measured in bytes.
- date and time the file was last used.
- number of bytes available on the disk.

#### Troubleshooting

If you have many files on your disk, and they move off the screen before you can see them, then you need to STOP SCROLL and CONTINUE SCROLL.

To stop scroll: Hold down the **Ctrl** key and press the **S** key.

To continue scroll: Press any key.

For more information on the DIR command, see your MS-DOS documentation, "User's Guide".

### INSTRUCTIONS: FORMATTING DISKS

#### Why format a disk?

Before a new diskette can be used to store data it must be formatted. Formatting erases the diskette and prepares it for storage.

***WARNING:*** *If you format a disk that already contains data, you will loose all the data on that disk. Do not format your systems disk, or your GW Basic, Wordstar, dBase or Supercalc disks. You will lose all data. Format blank disks only. Blank disks have blank labels. If you have not received a blank disk with the computer you need to purchase blank, 5 1/4" disks, available in computer stores or many stationery stores. Disks may be double or single density and double or single sided.*

VOL II  
20

Format is a transient command (also called an external command because it resides on the disk in external memory), therefore you must use your MS-DOS disk to use this command

#### Procedure: Formatting a Disk

- STEP 1      Make sure that MS-DOS is inserted in the A drive and close the disk drive door.
- STEP 2      Insert new (or to be formatted) disk into the B drive.  
Remember that everything on the disk to be formatted (B drive) will be erased.
- STEP 3      If your prompt is: A> then go to step 4.  
  
If your prompt is: B> than type **A:** and press the Enter key
- STEP 4      Type **format B:**  
**NOTE:** Do not forget to type **B:**
- STEP 5      Press the Enter key

GO TO THE NEXT PAGE

### INSTRUCTIONS: FORMATTING DISKS (continued)

#### Procedure: Formatting a Disk

You will receive a message:

**Insert new diskette for drive B:  
and strike Enter when ready**

STEP 6 Press the Enter key to start the formatting process.

This will take about a minute. Numbers will appear indicating the formatting process.

When the process is finished the following message will be displayed:

**Format another (y/n)**

STEP 7 Press Y (for yes) or N (for no).

#### Troubleshooting

If you receive the message "Bad Command or file name" or "Invalid parameters", check your spelling and start over at step 4.

For more information on formatting disks, see your MS-DOS documentation, "User's Guide".

### INSTRUCTIONS: COPYING FILES

#### Why copy a file?

Copying a file is making an exact duplicate of it. This command is very useful for making a "back-up" copy of your file in the event that the original file becomes damaged or unusable. In many cases you will use this command to transfer a file from one disk to another disk.

The COPY command is a resident (or internal memory) command. It is available whenever you have a DOS prompt (either A> or B>).

#### Procedure: Copying a file

VOL II  
22

In this procedure, you will copy files from the GW-BASIC disk to the disk you just finished formatting.

STEP 1      With MS-DOS loaded, remove MS-DOS disk and insert the GW-BASIC disk into the A drive and close the disk drive door.

STEP 2      Insert a blank, formatted disk into the B drive and close the disk drive door.

STEP 3      At the DOS prompt, A>, type **copy a:tree.com b:**  
  
If you make a typing error, use the backspace key to erase, and retype the command.

STEP 4      Press the Enter key.  
  
You have just copied the file tree.com from the disk in the A drive to the disk in the B drive.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: COPYING FILES (continued)

#### Procedure: Copying a file

STEP 5      Type **dir b:**

STEP 6      Press the Enter key.

You are viewing the disk in the B drive to check to see if the file copied.

Notice that when you view the directory of the disk in

#### **Volume in B drive has no label**

A volume label is an electronic version of the paper label you have on a floppy disk. If you wish to label a disk refer to MS-DOS, "User's Reference", "MS-DOS Command".

VOL II  
23

#### About copying files

The copy command has three parts to it.

The first part is the command COPY. This is followed by one space.

The second part is the file that is to be copied including the extension. You must specify which drive holds the file. If this is not specified than MS-DOS will guess the file is in the drive specified in the prompt. One space follows the file name.

The third part is the drive of the disk where the file is copied.

GO TO THE NEXT PAGE



### INSTRUCTIONS: COPYING FILES (continued)

#### About copying files

Examples:

A>copy b:tree.com a:           Enter key  
copies file tree.com on disk in B drive to disk in A drive

B>copy b:tree.com a:           Enter key  
copies file tree.com on disk in B drive to disk in A drive

B>copy a:gwbasic.exe b:       Enter key  
copies file gwbasic.exe on disk in A drive to disk in B drive

VOL II  
24

#### Troubleshooting

If you receive the message "File not found" or "Bad command or file name", check your spelling and retype the command.

If you receive the error message "File cannot be copied onto itself", check to see if you specified the third part of the command: the drive destination.

If you receive the error message "Invalid number of parameters", check to see if you have one space between COPY and the complete file name and one space between the complete file name and the destination drive. There should only be two spaces in the command.

For more information on the COPY command, see your MS-DOS documentation, "User's Guide".

### INSTRUCTIONS: DELETING FILES

#### Why delete a file?

Deleting a file is completely removing it from a disk. Once a file is deleted you will not be able to bring it back.

WARNING: Use this command with caution. You cannot retrieve a deleted file.

The DEL command is a resident (or internal memory) command. It is available whenever you have a DOS prompt (either A> or B>).

#### Procedure: Deleting a file

- STEP 1 Remove GW-BASIC from the A drive.
- STEP 2 Insert disk with copy of tree.com (from previous exercise) into the B drive and close the disk drive door.
- STEP 3 At the DOS prompt, A>, type **del b:tree.com**
- STEP 4 Press the Enter key.

You have just deleted the file tree.com from the disk in the B drive.

You will not receive any message from MS-DOS that a file has been deleted. To check to see if a file is deleted you must view the directory.

- STEP 5 Type **dir b:**
- STEP 6 Press the Enter key.

You are viewing the disk in the B drive to see that the file is deleted.

GO TO THE NEXT PAGE

### INSTRUCTIONS: DELETING FILES (continued)

#### About deleting files

The delete command has two parts to it.

The first part is the command DEL. This is followed by one space.

The second part is the file to be deleted including the extension. You must specify which drive holds the file. If this is not specified then MS-DOS will guess the file is in the drive specified in the prompt.

Examples (do not execute):

VOL II  
26

A>del b:tree.com                      Enter key

delete file tree.com on the disk from the B drive

B>del b:tree.com                      Enter key

delete file tree.com on the disk from the B drive

B>del a:report.doc                    Enter key

delete file report.doc on the disk from the A drive

#### Troubleshooting

If you receive the message "File not found" or "Bad command or file name", check your spelling and retype the command.

For more information on the DEL command, see your MS-DOS documentation, "User's Guide".

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook

#### Loading WordStar

Be sure you have:

- loaded MS-DOS.
- properly inserted your WordStar disk into the A: drive. The label side should be face up with the write-protect notch on the left as you insert the disk.
- closed the disk drive door.
- at the A> prompt, typed **WS** and pressed the Enter key.

For other problems loading WordStar, re-boot the machine using CTRL-ALT-DEL and start again.

VOL II  
41

#### Opening a Document File

Be sure you have:

- pressed **D** on the Opening Menu.
- pressed the Enter key after typing your file name.

For other problems opening a document file, press the **Esc** key and try opening a document file again.

**WARNING:** You have the following WS Systems files on your disk:

**WSCOLOR.BAS**

**WS.COM**

**WSMSG.S.OVR**

**WSOVLY1.OVR**

*Do not "OPEN", "EDIT" or "DELETE" any of these files. Accessing any of these files will render your disk inoperable.*

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Entering Text

If you make typing errors:

- be sure the Insert mode is off by looking at the top, right-hand corner of your screen. If it's on, press the key labeled **Ins**.
- use the cursor arrow keys (left, right, up, or down) to move to the location of your error, and then retype the text correctly.

If you pressed the Enter key instead of using word wrap:

- use the cursor arrow keys to move to the last character or space in the line that has the unwanted hard return.
- press **^G** to delete the hard return.
- press **Ins** to turn Insert mode on and press the **Space Bar** to place a space between the two words at the end of the line.
- press **Ins** to turn Insert mode off again.
- press **^B** to reform the text.

For other problems entering text, you might try:

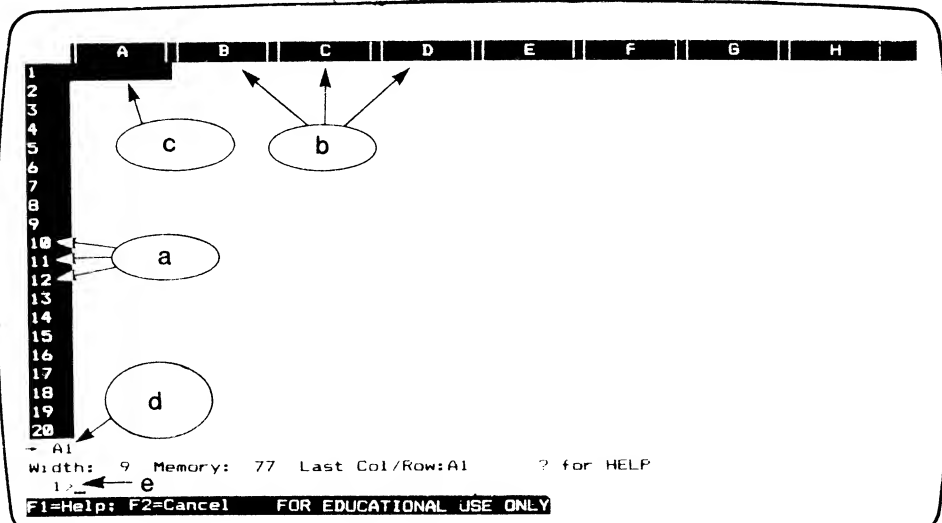
- (1) ignoring your errors,
- (2) deleting everything you've typed, or
- (3) pressing **^KQ** followed by **Y**, then starting over.

GO TO THE NEXT PAGE...

### PRACTICE TEST

1. Label the following components of a SuperCalc3 spreadsheet:

Insert picture 17.1 here



VOL II  
101

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_
- e) \_\_\_\_\_

2. Which of the following is called the AnswerKey in SuperCalc3?

- a) The question mark key.
- b) The right arrow key.
- c) The F1 function key.
- d) The F2 function key.

GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

3. The arithmetic operators used with SuperCalc3 are:
- a) addition (+), subtraction (=), multiplication (x), and division (/).
  - b) addition (+), subtraction (-), multiplication (\*), and division (=).
  - c) addition (+), subtraction (=), multiplication (x), and division (/).
  - d) addition (+), subtraction (-), multiplication (\*), and division (/).

### QUESTIONS (continued)

6. What is the correct formula for multiplying cell B3 by cell D4?
- a) B3/D4
  - b) B3xD4
  - c) B3\*D4
  - d) B3=D4
7. How do you give the command "GoTo cell D5"?
- a) \*D5
  - b) =D5
  - c) /D5
  - d) +D5
8. When the Del key is pressed:
- a) the character to the left of the edit cursor is deleted.
  - b) the character to the right of the edit cursor is deleted.
  - c) the character at the edit cursor is deleted.
  - d) all characters in a cell are deleted.

GO TO THE NEXT PAGE...



## UNIT QUESTIONNAIRE

## LESSONS 17A - 17B

### QUESTIONS (continued)

9. To exit from SuperCalc3, use the:
- a) stop slash command (/S).
  - b) exit slash command (/E).
  - c) finish slash command (/F).
  - d) quit slash command (/Q).
10. In an electronic spreadsheet, the intersection of a row and a column is call a(n):
- a) pixel.
  - b) cell.
  - c) entry line.
  - d) coordinate.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 18, LESSON 18A

### COMMAND SUMMARY

COMMAND	EFFECT
/F Options for /F: G(lobal) C(olumn) R(ow) E(ntry) D(efine)	Format slash command  Entire spreadsheet affected Column or range of columns affected Row or range of rows affected Specific cells affected User-defined formats
Esc ' SUM F2	Points to the current cell address Repeating text mode on/off Adds values in range of cells specified Cancels any slash command

### PRACTICE TEST

1. What entries should be typed to load a spreadsheet located in a file named QTRESULT on drive A?:
  - a) /LOAD,QTRESULT,P
  - b) /LQTRESULT,A
  - c) /LQTRESULT,A and then press the Enter key
  - d) /LOAD,QTRESULT,ALL and then press the Enter Key
  
2. To expand all columns in a spreadsheet to a width of fifteen characters, which of the following entries should be typed?
  - a) /FGC15 and then press the Enter key
  - b) /GFC15 and then press the Enter key
  - c) /GF15 and then press the Enter key
  - d) /FG15 and then press the Enter key
  
3. To return to the spreadsheet screen from the user-defined format table screen:
  - a) the F1 function key is pressed.
  - b) the F2 function key is pressed.
  - c) the output slash command is used.
  - d) the exit slash command is used.

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
OUTPUT SLASH COMMAND	A.62
SPREADSHEET BORDERS	A.64
GLOBAL SLASH COMMAND	A.64
CONTENTS REPORT	A.68

### COMMAND SUMMARY

COMMAND	EFFECT
/O	Output slash command
Options for /O:	
D(isplay)	Report contains data as displayed on screen.
C(ontents)	Report contains actual contents of cells
P(rinter)	Report printed on printer
S(etup)	Report printed with special options
C(onsole)	Report displayed on screen.
D(isk)	Report sent to a disk file
/G	Global slash command
Option for /G:	
B(order)	Turns Border feature on/off

### QUESTIONS (continued)

3. Which command initiates the pointing feature?
- a) The Enter key
  - b) The Del key
  - c) The F1 function key
  - d) The Esc key
4. To turn the repeating text feature off:
- a) type a single apostrophe (') and press the Enter key.
  - b) type a colon (:) and press the Enter key.
  - c) type an equal sign (=) and press the Enter key.
  - d) type a plus sign (+) and press the Enter key.
5. What command is used to remove the spreadsheet border prior to printing the spreadsheet?
- a) The Format slash command
  - b) The Output slash command
  - c) The Global slash command
  - d) The Range slash command

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSONS 18A - 18B

### QUESTIONS (continued)

6. The entry  $A6\$=F6-F8$  on the content report of a spreadsheet indicates that:
- a) cell A6 is formatted using the dollar format and the cell will contain the value generated by subtracting the value in cell F6 from the value in cell F8.
  - b) cell A6 is formatted using the dollar format and the cell will contain the value generated by subtracting the value in cell F8 from the value in cell F6.
  - c) cells F6 and F8 are formatted using the dollar format and both contain the value found in cell A6.
  - d) the value in cell A6 is obtained by subtracting the value in cell F6 from the value in cell F8 and then divided by 100.
7. How do you give the command to right-justify the text data in cells D13 and D14?
- a) /RJD13.D14 and then press the Enter key.
  - b) /FGD13.D14,RJ and then press the Enter key.
  - c) /FCD13.D14,TR and then press the Enter key.
  - d) /FED13.D14,TR and then press the Enter key.
8. The entry /ODALL,P will cause:
- a) the entire spreadsheet to be printed on the printer in the same format as displayed on the screen.
  - b) the entire spreadsheet to be stored on a disk and printed in the same format as displayed on the screen.
  - c) selected cells in the spreadsheet to be printed on the printer in the same format as displayed on the screen.
  - d) selected cells in the spreadsheet to be printed on the console in the same format as when the spreadsheet was last saved.

GO TO THE NEXT PAGE...

Write and execute a BASIC program which prints out the following:

### SAVINGS ACCOUNT PROGRAM

by

<insert your name here>

Your program must be able to run without any errors.

**Submit a printout of your code to NTS with the Answer Card for Unit 21.**

To obtain a printout of your program, follow the steps below:

- |               |   |
|---------------|---|
| <u>STEP 1</u> | Make sure your program is saved.  |
| <u>STEP 2</u> | Load the program you want to print.                                       |
| <u>STEP 3</u> | Load the printer with paper and turn printer on.                          |
| <u>STEP 4</u> | Make sure the printer is on-line.   |
| <u>STEP 5</u> | Type "LLIST"  |
| <u>STEP 6</u> | Press the Enter key. The printer will start.                              |
| <u>STEP 7</u> | When finished printing, set printer off-line.                             |
| <u>STEP 8</u> | Remove printout from printer.   |
| <u>STEP 9</u> | Type "System" and press Enter to quit<br>GWBasic or load another program. |

VOL II  
201A

GO TO THE NEXT PAGE...





### INSTRUCTIONS: PRINTING YOUR PROGRAM

- STEP 1      Make sure your program is saved.
- STEP 2      Quit GW-BASIC.
- STEP 3      Load the printer with paper and turn the printer on.
- STEP 4      Make sure the printer is on-line.
- STEP 5      Insert MS-DOS into the B drive.
- STEP 6      Change the prompt by typing **b:** and pressing the Enter key.
- STEP 7      Type **print a:trial.bas**
- STEP 8      Press the Enter key.
- The print command is a MS-DOS command. Because MS-DOS was placed in the B drive, we changed the prompt to B>. The word print is followed by one space, followed by the complete file name.
- STEP 9      Respond to any questions displayed regarding printer output.
- The printer will start printing your program.
- STEP 10      When finished printing, set the printer to off-line.
- STEP 11      Remove the paper printout.

### PRACTICE TEST

1. What is wrong with the following program?

```
10 cls
20 let t=16
30 print "t = " t
40 cls
50 input b
60 print b
70 end
```

- a) Statement 10 cls should be removed.
- b) Statement 40 cls should be placed after the input statement.
- c) A cls statement should be placed before line 70.
- d) A cls statement should be placed after line 20.

**VOL II**  
**245**

2. The rem statement is used for:

- a) indicating what variables are used for.
- b) documenting logic used in the program.
- c) describing the purpose of the program.
- d) all of the above.

3. What GW BASIC command is used to obtain a hardcopy of a BASIC program?

- a) Print
- b) Output
- c) Input
- d) Llist

**GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS.**

### **ANSWERS TO PRACTICE TEST**

1. **C**

If you missed this question, go back and review page 12.6 in the textbook.

2.   a)       **Who uses these tools.**  
      b)       **Where these tools are used.**  
      c)       **What systems and procedures must be developed.**

If you missed this question, go back and review page 12.10 in the textbook.

### ANSWERS TO PRACTICE TEST

1.
  - a) row
  - b) column
  - c) cell
  - d) current cell address
  - e) entry line

If you missed this question, go back and review pages A.2 and A.3 in the textbook.

2. **A, C**

If you missed this question, go back and review page A.4 in the textbook.

3. **D**

If you missed this question, go back and review page A.17 in the textbook.

## SETTING UP YOUR COMPUTER

## LESSON 14A

### OBJECTIVES

- Set up your computer by unpacking it and connecting the various components together.
- Set up your printer by connecting it to your computer.
- Operate your printer by loading it with paper and running a check test.
- Identify the parts of your computer.
- Describe the proper way to handle floppy disks.
- Identify the differences between typing and computing.

### TO COMPLETE LESSON 14A

VOL II  
1

- |               |  |
|---------------|--|
| <u>STEP 1</u> | Read SET-UP INSTRUCTIONS on the next page of this study guide.   |
| <u>STEP 2</u> | Read the set-up instructions of your NTS near-letter-quality printer and execute the instructions presented. |
| <u>STEP 3</u> | Read SYSTEM COMPONENTS in this lesson of the study guide.  |
| <u>STEP 4</u> | Read HANDLING FLOPPY DISKS in this lesson of the study guide.  |
| <u>STEP 5</u> | Read USING THE KEYBOARD in this lesson of the study guide.   |
| <u>STEP 6</u> | Take the PRACTICE TEST for Lesson 14A.   |
| <u>STEP 7</u> | Score the PRACTICE TEST for Lesson 14A.  |

### SET-UP INSTRUCTIONS

#### STEP 1

Unpack each box and identify the following components:

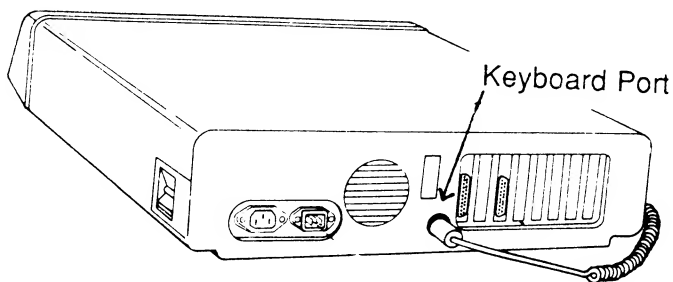
Processor Unit  
Display or CRT  
Keyboard  
Printer  
MS-DOS documentation (you will also have documentation on some of your hardware components)

You may want to refer to the picture in SYSTEM COMPONENTS on the following page of this study guide for help.

VOL II  
2

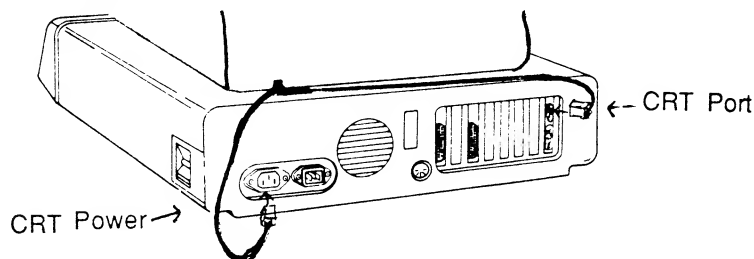
#### STEP 2

Plug the keyboard into the processor unit.



#### STEP 3

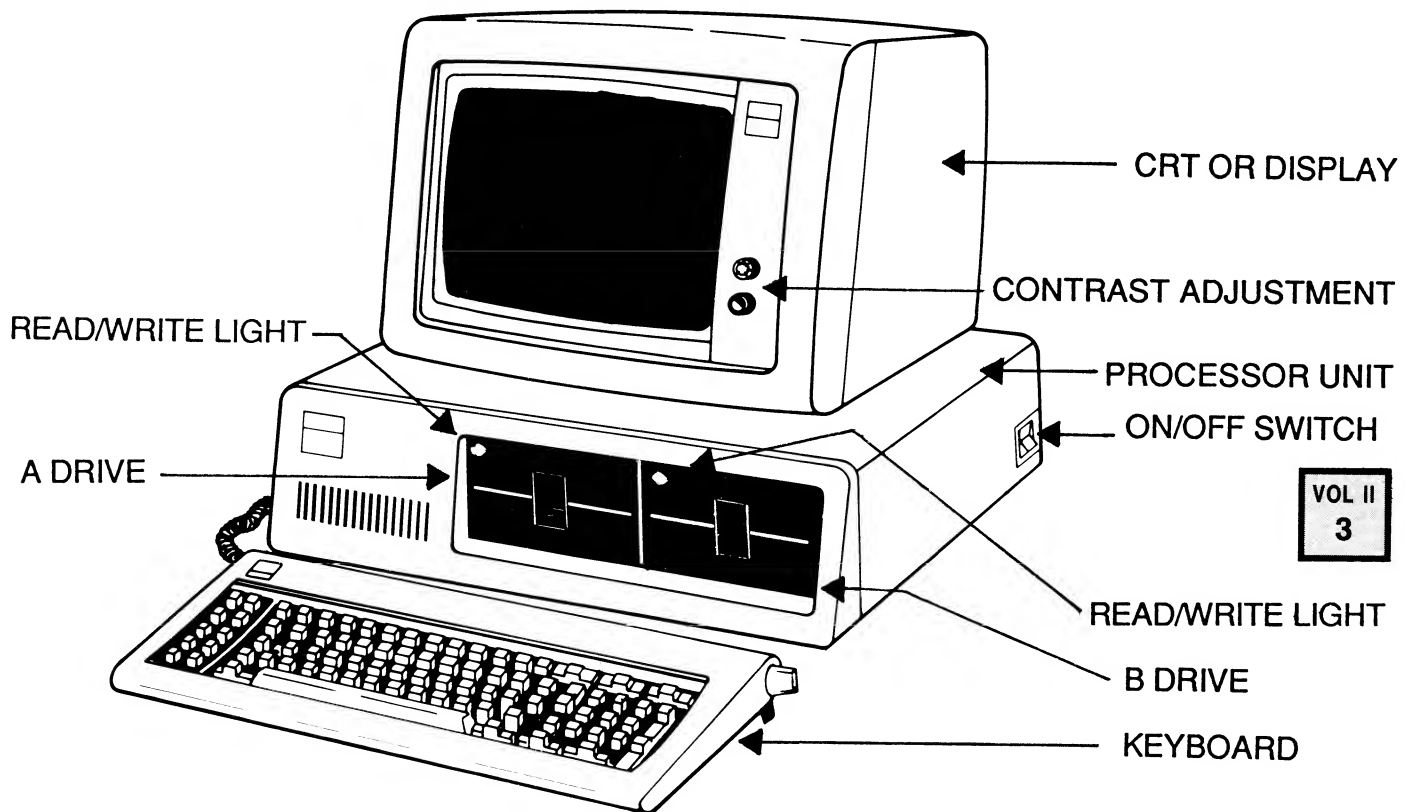
Plug the monochrome monitor into the processor unit.



#### STEP 4

Plug the power cord into the wall outlet.

### SYSTEM COMPONENTS

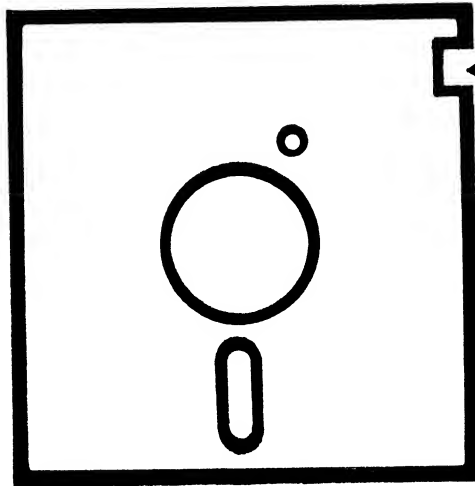


YOUR SYSTEM MAY BE SLIGHTLY DIFFERENT THAN THE ONE PICTURED ABOVE. IF YOU HAVE TWO DISK DRIVES STACKED ON TOP OF ONE ANOTHER, THE TOP DRIVE IS A AND THE BOTTOM DRIVE IS B. THE RED LIGHT ON THE DRIVE IS THE READ/WRITE LIGHT. FINALLY, THE CONTRAST ADJUSTMENT ON YOUR DISPLAY MAY BE LOCATED ON THE SIDE OF THE DISPLAY.

For more information on the system components, see your MS-DOS documentation, "User's Guide".

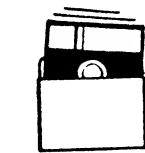


### HANDLING FLOPPY DISKS



READ/WRITE NOTCH

VOL II  
4



Protect  
Protéger  
Protéger  
Schützen  
保護



No  
No  
Non  
Nicht  
注意



Insert carefully  
Insertar con cuidado  
Insérer avec soin  
Vorsichtig Einführen  
挿入注意



Never touch!  
Nunca toque!  
Jamais toucher!  
Nie Berühren!  
絶対禁止



10°C → 52°C  
50°F → 125°F



Never  
Nunca  
Jamais  
Nie  
絶対禁止

For more information on handling floppy disks, see your MS-DOS documentation, "User's Guide".

# COMPULIT - Unit 14

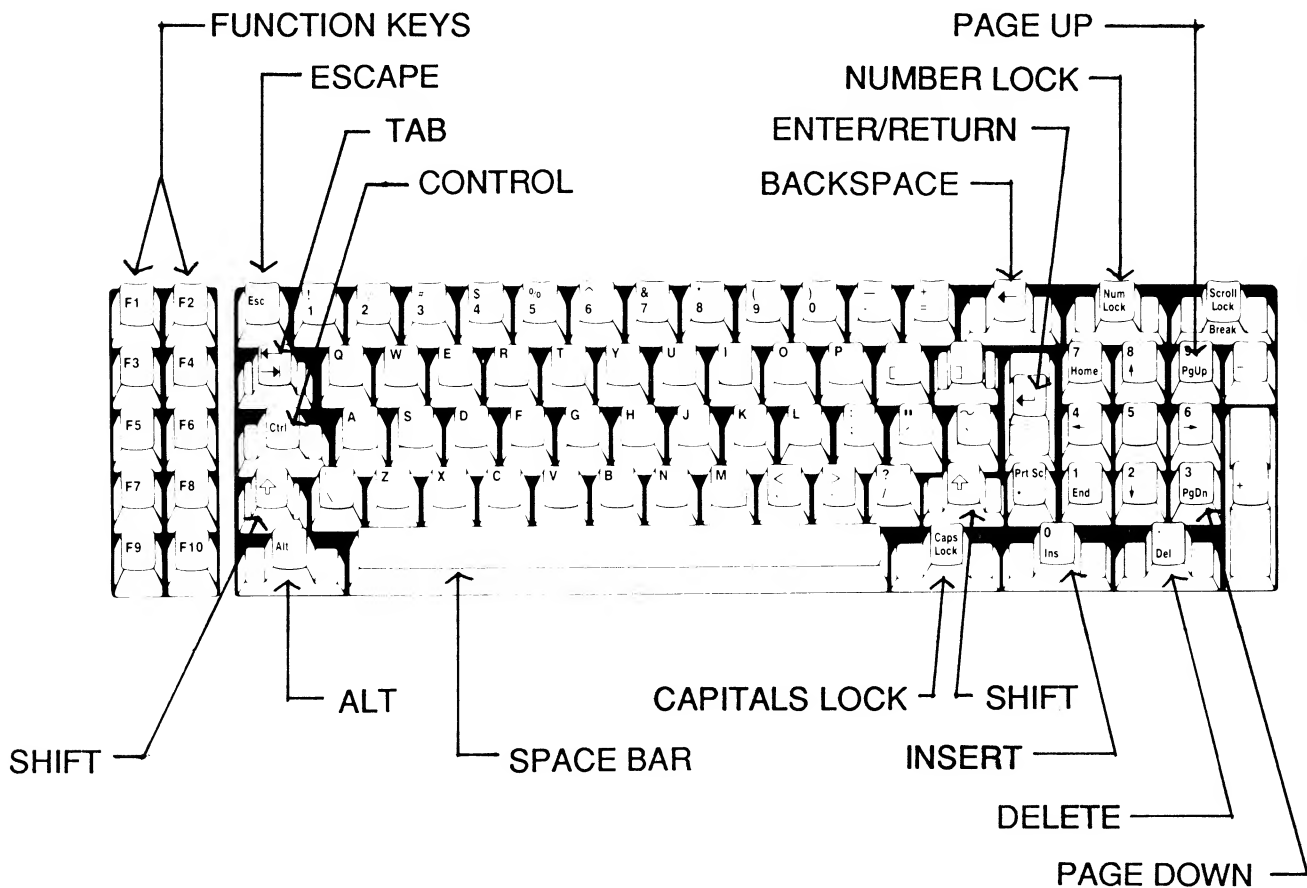
## SETTING UP YOUR COMPUTER

## LESSON 14A

### USING THE KEYBOARD

#### STEP 1

The keyboard you are using is made up of the standard typing keys plus some additional keys that may be new to you. Using the picture below, identify each of the labeled keys on your own keyboard.



### USING THE KEYBOARD (continued)

#### STEP 2

There are several differences between typing and computing. In typing, some keys can be exchanged for another, for example if you want to type the number one (1) you might use a lower case L (l).

In computing each key is unique. You cannot type a lower case L (l) for a number one (1).

Now locate the following keys on your keyboard:

Number zero (0)	Letter O
Number one (1)	Letter L
Right slash (/)	Left slash (\)

Remember if you want to type a zero be sure to use the number zero and not the letter O.

#### STEP 3

Your keyboard has two sets of numbers. Locate the two sets of numbers on your keyboard.

In most programs you will use the numbers at the top of the keyboard to enter a number. Some programs, (for example electronic spreadsheets or data bases) allow you to input numbers using the number pad to the right of the keyboard. This number pad can also be used to move around the screen (for example, page up, right arrow is a character to the right, etc.). Refer to the software you are using to find out how to enter in numbers.

GO TO THE NEXT PAGE...

### USING THE KEYBOARD (continued)

#### STEP 4

When you type you press one key at a time except if you want a capital letter. To get a capital or upper case letter you hold down a shift key and type the letter you want. This is called a double keystroke.

In computing you use double keystrokes frequently. The keys on your keyboard that can be used for double keystrokes are:

Shift  
Alt  
Ctrl (Control)  
Esc (Escape)

Locate these keys on your keyboard.

Remember in a double keystroke you will hold down one key while you type another. For example, if you were to execute a Ctrl-C, you would hold down the Ctrl key and type a C.

VOL II  
7

#### STEP 5

While some computers have a separate Return key and a separate Enter key, on your computer the Enter key and the Return key are the same key.

Whenever you come across "press the Return key" or "press the Enter key" you will be pressing the same key.

For more information on the keyboard, see your MS-DOS documentation, "User's Guide".

### PRACTICE TEST

1. Name two keys that are often exchanged in typing but should not be exchanged in computing.

\_\_\_\_\_ and \_\_\_\_\_

2. Which of the following is NOT a proper way to handle floppy disks.

- a) Keep the disk in its cover when not being used
- b) Store disks in a cool (temperature) place.
- c) Clean disks regularly with cleaning fluid
- d) Hold disks at the corner.

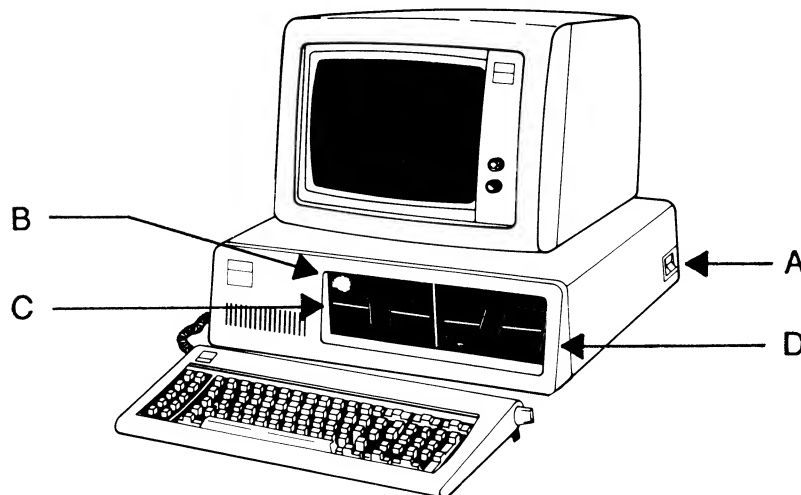
3. In a double keystroke you:

- a) press two keys at the same time.
- b) press the first key then press the second key.
- c) hold down the first key then type the second key.
- d) type the same key twice.

### PRACTICE TEST (continued)

4. Identify the computer components by placing the letter in the appropriate blank.

- \_\_\_ B drive
- \_\_\_ On/Off switch
- \_\_\_ A drive
- \_\_\_ read/write light



GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

### OBJECTIVES

- Load MS-DOS.
- Format floppy disks.
- View the contents of a floppy disk from the A drive and the B drive.
- Copy files from one drive to another.
- Delete files from a disk.

### TO COMPLETE LESSON 14B

VOL II  
10

- |               |  |
|---------------|--|
| <u>STEP 1</u> | Read "Appendix Preface" in the textbook.   |
| <u>STEP 2</u> | Read and execute INSTRUCTIONS: LOADING MS-DOS on the next page of this study guide.  |
| <u>STEP 3</u> | Refer to your MS-DOS documentation, "User's Guide", and make a back-up copy of your MS-DOS (program disk and GW-BASIC disk). |
| <u>STEP 4</u> | Read and execute INSTRUCTIONS: VIEWING FILES in this lesson.   |
| <u>STEP 5</u> | Read and execute INSTRUCTIONS: FORMATTING DISKS in this lesson.  |
| <u>STEP 6</u> | Read and execute INSTRUCTIONS: COPYING FILES in this lesson.   |
| <u>STEP 7</u> | Read and execute INSTRUCTIONS: DELETING FILES in this lesson.  |

GO TO THE NEXT PAGE...

### TO COMPLETE LESSON 14B (continued)

- STEP 8      Read and execute INSTRUCTIONS: RELOADING MS-DOS in this lesson
- STEP 9      Read INSTRUCTIONS: QUITTING MS-DOS in this lesson.
- STEP 10     Take the PRACTICE TEST for Lesson 14B.
- STEP 11     Score the PRACTICE TEST for Lesson 14B.





### What is MS-DOS?

MS-DOS (MicroSoft Disk Operating System) is the managing or controlling software for your computer. To use most software programs, you need to "load" MS-DOS when you FIRST turn the computer on. When you load MS-DOS you are copying the most essential parts of MS-DOS into your computer's main memory.

Your MS-DOS package contains two disks. The program disk contains most of MS-DOS. Whenever you are asked to insert the MS-DOS disk into the disk drive, you will insert the program disk.

The second disk that comes with the package contains supplemental programs and GW-BASIC. Whenever you are asked to insert the GW-BASIC disk, you will insert the disk with supplemental programs and GW-BASIC interpreter.

VOL II  
12

### Procedure: How to Load MS-DOS?

- STEP 1      Make sure your computer is turned off.
- STEP 2      Insert the MS-DOS disk into your A drive. The label side should be facing up and the write-protect notch on the left as you insert it. Close the disk drive door.
- See the picture in the "Appendix Preface" in the textbook for help.

GO TO THE NEXT PAGE...

### LOADING MS-DOS (continued)

#### Procedure: How to Load MS-DOS?

##### STEP 3

Turn your computer on. If your monitor has a separate on/off switch, turn your monitor on.

The numbers that appear on the screen indicate the computer is running a memory check.

Notice the A drive read/write light goes on when the computer is accessing the information on the disk.

**WARNING:** Never remove a disk from a drive if it's read/write light is on. Removing it may cause data loss on the disk.

The following message appears on your display:

**Current date is Tue 1-01-1980  
Enter new date (mm-dd-yy):**

##### STEP 4

Type in the current date using the format provided. For example if the date is June 1, 1987, you type 06-01-87. Use the number keys at the top of the keyboard, and do not have any spaces between the numbers or the dashes.

### LOADING MS-DOS (continued)

#### Procedure: How to Load MS-DOS?

STEP 5 Press the Enter key,

The following message appears on your display:

**Current time is 0:00:45:10  
Enter new time :**

**VOL II  
14**

STEP 6 Type in the current time according to a 24 hour clock. For example if the current time is 8:00 am type 8:00. If the time is 4:00 pm, type 16:00. You can type in hours, minutes, seconds, and hundreds of a second. It is suggested that you just type in the hour followed by a colon, followed by the minutes.

STEP 7 Press the Enter key,

You now have the MS-DOS prompt, **A>**, appearing on the screen and you are ready to begin your next task.

The prompt tells you that you are in DOS and that you are currently accessing the A drive.

The flashing line following the prompt is called the cursor.

GO TO THE NEXT PAGE

### LOADING MS-DOS (continued)

#### Troubleshooting

If you receive the message "Non-System Disk" you probably did not insert MS-DOS but some other software. When the read/write light on drive A turns off, remove the disk and place MS-DOS in drive A and press any key.

If you receive the message "Invalid date", check the format of what you typed. You must type a number, followed by a dash (this key is at the top right-hand side of the keyboard and paired with the underline character), followed by the number for the day, followed by another dash, followed by the number for the year. There are no spaces. Try entering the date again.

If you receive the message "Invalid time", check the format of what you typed. You must type a number, followed by a colon (:) followed by the number for the minutes; there are no spaces. Try entering the date again.

For more information on loading MS-DOS, see your MS-DOS documentation, "User's Guide".



### What is a file?

#### What is a file?

When you enter and store data in the computer, you will store it in a file.

Files are stored on floppy disks in a directory. If you wish to view the names of the files you have on a floppy disk, you view the directory.

The MS-DOS command to view a directory is a resident command, therefore it is available to you whenever you have a MS-DOS prompt (A> or B>).

VOL II  
16

#### Procedure: How to view a directory?

- STEP 1      Make sure the MS-DOS disk is in the A drive and the disk drive door is closed.
- STEP 2      At the MS-DOS prompt, A>, type **dir**
- STEP 3      Press the Enter key.

The file names of the disk in the A drive are displayed.

There are many files on your MS-DOS disk. Some will scroll or move off the screen before they can be read. If you would like to know how to stop the screen (or stop scroll) see Troubleshooting in this section.

GO TO THE NEXT PAGE

### INSTRUCTIONS: VIEWING FILES (continued)

#### Procedure: How to view a directory?

STEP 4      Insert the GW-Basic disk into the B drive and close the drive door.

STEP 5      Type **B:**

STEP 6      Press the Enter key.

The MS-DOS prompt changes to B>

STEP 7      At the MS-DOS prompt, B>, type **dir**

STEP 8      Press the Enter key.

The file names of the disk in the B drive are displayed.

VOL II  
17

#### About the DIR command

The DIR (DIRectory) command will display the contents of the disk in the whatever drive is specified in the prompt. In the previous instructions you saw that by changing the prompt you could access disks in either drive.

The DIR command is a resident (or internal memory) command. It is available whenever you have a DOS prompt (either A> or B>).

Now let's see how to view a directory without changing the prompt.

GO TO THE NEXT PAGE

### INSTRUCTIONS: VIEWING FILES (continued)

#### Procedure: How to view a directory?

STEP 9 At the MS-DOS prompt, B>, Type **dir a:**

STEP 10 Press the Enter key.

The file names of the disk in the A drive are displayed. Again notice the read/write light goes on whenever you access information on the disk.

STEP 11 At the MS-DOS prompt, B>, type **dir b:**

STEP 12 Press the Enter key.

The file names of the disk in the B drive are displayed.

VOL II  
18

In the previous procedure you practiced:

- how to switch the prompt from A> to B> and back to A>
- how to view a disk directory on either drive regardless of the prompt.

#### More about the DIR command

Below are several examples of how to work with the DIR command.

<u>Command</u>	<u>Result</u>
A> <b>dir b:</b> Enter key	view contents of disk in B drive
B> <b>DIR B:</b> Enter key	view contents of disk in B drive
B> <b>dir a:/w</b> Enter key	view contents of disk in A drive in a wide view

GO TO THE NEXT PAGE

### INSTRUCTIONS: VIEWING FILES (continued)

#### About file names

File names are made up of two parts.

The first part is a name that is unique to all other names in that same directory (this allows MS-DOS to find one file from another). While some software applications will allow you to create a filename with more than eight characters, MS-DOS will display only the first eight characters.

The second part (called the extension) is often used to denote what software application is associated with the file (for example BASIC uses the extension BAS and MS-DOS uses the extension COM). Extensions are three or less characters long.

Other pieces of information are displayed when you view a directory. These are:

- size of the file measured in bytes.
- date and time the file was last used.
- number of bytes available on the disk.

#### Troubleshooting

If you have many files on your disk, and they move off the screen before you can see them, then you need to STOP SCROLL and CONTINUE SCROLL.

To stop scroll: Hold down the **Ctrl** key and press the **S** key.

To continue scroll: Press any key.

For more information on the DIR command, see your MS-DOS documentation, "User's Guide".



### INSTRUCTIONS: FORMATTING DISKS

#### Why format a disk?

Before a new diskette can be used to store data it must be formatted. Formatting erases the diskette and prepares it for storage.

WARNING: If you format a disk that already contains data, you will lose all the data on that disk.

Format is a transient command (also called an external command because it resides on the disk in external memory), therefore you must use your MS-DOS disk to use this command

VOL II  
20

#### Procedure: Formatting a Disk

- STEP 1      Make sure that MS-DOS is inserted in the A drive and close the disk drive door.
- STEP 2      Insert new (or to be formatted) disk into the B drive.
- Remember that everything on the disk to be formatted (B drive) will be erased.
- STEP 3      If your prompt is: A> then go to step 4.
- If your prompt is: B> then type **A:** and press the Enter key
- STEP 4      Type **format b:**
- STEP 5      Press the Enter key

GO TO THE NEXT PAGE

### INSTRUCTIONS: FORMATTING DISKS (continued)

#### Procedure: Formatting a Disk

You will receive a message:

**Insert new diskette for drive B:  
and strike Enter when ready**

STEP 6 Press the Enter key to start the formatting process.

This will take about a minute. Numbers will appear indicating the formatting process.

When the process is finished the following message will be displayed:

**Format another (y/n)**

STEP 7 Press Y (for yes) or N (for no).

#### Troubleshooting

If you receive the message "Bad Command or file name" or "Invalid parameters", check your spelling and start over at step 4.

For more information on formatting disks, see your MS-DOS documentation, "User's Guide".

### INSTRUCTIONS: COPYING FILES

#### Why copy a file?

Copying a file is making an exact duplicate of it. This command is very useful for making a "back-up" copy of your file in the event that the original file becomes damaged or unusable. In many cases you will use this command to transfer a file from one disk to another disk.

The COPY command is a resident (or internal memory) command. It is available whenever you have a DOS prompt (either A> or B>).

#### Procedure: Copying a file

VOL II  
22

In this procedure, you will copy files from the GW-BASIC disk to the disk you just finished formatting.

STEP 1      With MS-DOS loaded, remove MS-DOS disk and insert the GW-BASIC disk into the A drive and close the disk drive door.

STEP 2      Insert a blank, formatted disk into the B drive and close the disk drive door.

STEP 3      At the DOS prompt, A>, type **copy a:tree.exe b:**  
  
If you make a typing error, use the backspace key to erase, and retype the command.

STEP 4      Press the Enter key.  
  
You have just copied the file tree.exe from the disk in the A drive to the disk in the B drive.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: COPYING FILES (continued)

#### Procedure: Copying a file

STEP 5      Type **dir b:**

STEP 6      Press the Enter key.

You are viewing the disk in the B drive to check to see if the file copied.

Notice that when you view the directory of the disk in

#### **Volume in B drive has no label**

A volume label is an electronic version of the paper label you have on a floppy disk. If you wish to label a disk refer to MS-DOS, "User's Reference", "MS-DOS Command".

VOL II  
23

#### About copying files

The copy command has three parts to it.

The first part is the command COPY. This is followed by one space.

The second part is the file that is to be copied including the extension. You must specify which drive holds the file. If this is not specified than MS-DOS will guess the file is in the drive specified in the prompt. One space follows the file name.

The third part is the drive of the disk where the file is copied.

GO TO THE NEXT PAGE

### INSTRUCTIONS: COPYING FILES (continued)

#### About copying files

Examples:

A> **copy b:tree.exe a:**                      Enter key  
copies file tree.exe on disk in B drive to disk in A drive

B> **copy b:tree.exe a:**                      Enter key  
copies file tree.exe on disk in B drive to disk in A drive

B> **copy a:gwbasic.exe b:**                  Enter key  
copies file gwbasic.exe on disk in A drive to disk in B drive

VOL II  
24

#### Troubleshooting

If you receive the message "File not found" or "Bad command or file name", check your spelling and retype the command.

If you receive the error message "File cannot be copied onto itself", check to see if you specified the third part of the command: the drive destination.

If you receive the error message "Invalid number of parameters", check to see if you have one space between COPY and the complete file name and one space between the complete file name and the destination drive. There should only be two spaces in the command.

For more information on the COPY command, see your MS-DOS documentation, "User's Guide".

### INSTRUCTIONS: DELETING FILES

#### Why delete a file?

Deleting a file is completely removing it from a disk. Once a file is deleted you will not be able to bring it back.

**WARNING:** Use this command with caution. You cannot retrieve a deleted file.

The DEL command is a resident (or internal memory) command. It is available whenever you have a DOS prompt (either A> or B>).

#### Procedure: Deleting a file

- STEP 1 Remove GW-BASIC from the A drive.
- STEP 2 Insert disk with copy of tree.exe (from previous exercise) into the B drive and close the disk drive door.
- STEP 3 At the DOS prompt, A>, type **del b:tree.exe**
- STEP 4 Press the Enter key.
- You have just deleted the file tree.exe from the disk in the B drive.
- You will not receive any message from MS-DOS that a file has been deleted. To check to see if a file is deleted you must view the directory.
- STEP 5 Type **dir b:**
- STEP 6 Press the Enter key.
- You are viewing the disk in the B drive to see that the file is deleted.

### INSTRUCTIONS: DELETING FILES (continued)

#### About deleting files

The delete command has two parts to it.

The first part is the command DEL. This is followed by one space.

The second part is the file to be deleted including the extension. You must specify which drive holds the file. If this is not specified then MS-DOS will guess the file is in the drive specified in the prompt.

Examples (do not execute):

VOL II  
26

A>del b:tree.com                      Enter key

delete file tree.com on the disk from the B drive

B>del b:tree.com                      Enter key

delete file tree.com on the disk from the B drive

B>del a:report.doc                    Enter key

delete file report.doc on the disk from the A drive

#### Troubleshooting

If you receive the message "File not found" or "Bad command or file name", check your spelling and retype the command.

For more information on the DEL command, see your MS-DOS documentation, "User's Guide".

### INSTRUCTIONS: RELOADING MS-DOS

#### Why reload MS-DOS?

During your work session, you may run into trouble and cannot get any response from the computer (for example, you try pressing several different keys and all the computer does is beep at you). You can restart the computer without turning it off. This is called reloading or a "warm boot".

#### How to Reload MS-DOS?

- STEP 1      Remove any disk from the A drive.
- STEP 2      Insert the MS-DOS floppy disk into your A drive. Make sure you insert it with the label facing up, and the door closed behind it.
- STEP 3      Press the **Ctrl** key, the **Alt** key, and the **Del** key SIMULTANEOUSLY. The screen will clear.

VOL II  
27

MS-DOS will load and you will be asked to enter the date and time. Refer to INSTRUCTIONS: LOADING DOS in this lesson for additional information.

#### Troubleshooting

See INSTRUCTIONS: LOADING MS-DOS.

For more information on reloading MS-DOS, see your MS-DOS documentation, "User's Guide".



### INSTRUCTIONS: QUITTING MS-DOS

#### When to quit MS-DOS?

Is it a good idea to turn your computer off whenever you are not using it for a long period of time (a few hours or more). The computer uses very little electricity, so if you are using it, and you get called away for an hour or so but plan on using it later, just leave it on (but be sure to save any work before you leave.... more on this later).

#### Procedure How to Quit MS-DOS?

VOL II  
28

- |               |  |
|---------------|--|
| <u>STEP 1</u> | Make sure you have a MS-DOS prompt.  |
| <u>STEP 2</u> | Remove any disk from the floppy drives.  |
| <u>STEP 3</u> | Turn your computer off. If your monitor has a separate on/off switch, turn your monitor off. |
| <u>STEP 4</u> | If you were using your printer, turn your printer off.                                       |

#### Troubleshooting

For more information on quitting MS-DOS, see your MS-DOS documentation, "User's Guide".

### PRACTICE TEST

1. If your prompt is A> and you want to view the contents of a disk in the B drive, what would you type:  
  
\_\_\_\_\_
2. Pressing the Ctrl key, Alt key, and Del key simultaneously is called:
  - a) a "warm boot".
  - b) a "cold boot".
  - c) restarting.
  - d) both a and c.
3. The command to duplicate a file from one disk to another disk is:
  - a) DEL
  - b) DIR
  - c) COPY
  - d) FORMAT
4. You have just purchased a new box of floppy disks. What MS-DOS command will prepare those disks for usage:
  - a) DIR
  - b) FORMAT
  - c) DEL
  - d) COPY

### PRACTICE TEST (continued)

5. You have a file labeled report.doc on a disk in the B drive. You want to copy it to a disk in the A drive. Given the prompts below, write the command for this in the blank.

A> \_\_\_\_\_

B> \_\_\_\_\_

# COMPULIT - Unit 14



## UNIT QUESTIONNAIRE

## LESSONS 14A - 14B

You have just finished Lessons 14A and 14B.

### INSTRUCTIONS

- STEP 1 Take an answer card from the pocket at the back of the notebook.
- STEP 2 Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3 Take your unit questionnaire.

### QUESTIONS

VOL II  
31

1. The MS-DOS prompt is A>. You want to copy the file format.com on a disk on the A drive to a disk on the B drive. You type:
- |    |                      |             |
|----|----------------------|-------------|
| a) | copy a:format,com b: | press Enter |
| b) | copy format b:       | press Enter |
| c) | copy format.com b:   | press Enter |
| d) | copy format.com to b | press Enter |

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSONS 14A - 14B

### QUESTIONS (continued)

2) You want to view contents of a disk. You put the disk in the A drive and at the B> prompt you type:

- a) dir /w      press Enter
- b) dir          press Enter
- c) dir a:       press Enter
- d) dir b:       press Enter

3. What software are you placing in the A drive when you execute a "warm boot"

- a) WordStar
- b) MS-DOS
- c) format.com
- d) report.doc

4. You need to remove the file report.doc from a disk. You place the disk in the A drive and type:

- a) del a:report.doc b:      press Enter
- b) del report.doc          press Enter
- c) del b:report.doc        press Enter
- d) del report                press Enter

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

5. If you get the error message, "Non-System Disk" when you are loading MS-DOS, you should:
- a) check to see if you inserted the MS-DOS disk in the drive.
  - b) check to see if you misspelled the command and reload MS-DOS.
  - c) format your disk first.
  - d) place MS-DOS in the B drive and reload MS-DOS.
6. You want to copy a file week1.txt on a disk on the A drive to a disk on the B drive. The MS-DOS prompt is B>; you type:
- a) copy b:week1.txt b:                      press Enter
  - b) copy a:week1.txt b:                      press Enter
  - c) copy a:wekk1.txt b:                      press Enter
  - d) copy a:week1.txt b:                      press Enter
7. You are trying to copy a file and you get an error message "Invalid number of parameters". What should you look for?
- a) The file extension is missing.
  - b) The word COPY is missing.
  - c) Spelling error in the word COPY
  - d) The spaces between the command COPY and the source file name and the destination

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSONS 14A - 14B

### QUESTIONS (continued)

8) Which of the following commands is used to STOP SCROLL?

- a) Pause key
- b) Any key
- c) Ctrl-S
- d) Ctrl-C

9. The command to change the prompt from A> to B> is:

- a) b:           press Enter
- b) B           press Enter
- c) dir B:      press Enter
- d) B:

VOL II  
34

10. Which of the following is NOT a correct operation of your computer?

- a) Only remove disks from the drives when the read/write light is on.
- b) Keep disks stored away from direct sunlight.
- c) Make a back-up of your disks on a regular basis.
- d) Before formatting a used diskette, check to see if all data on it should be erased.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 15, LESSON 15A

### OBJECTIVES

- Identify two types of application software packages and give examples of each type.
- Describe the key features of word processing software and spelling checkers.
- List and describe five guidelines for purchasing prewritten software packages.

### TO COMPLETE LESSON 15A

- STEP 1      Read the major headings in the textbook, pages 12.1 through 12.5.
- STEP 2      Read pages 12.1 through 12.6 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 15A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 15A.
- STEP 5      Score the PRACTICE TEST for Lesson 15A.



### KEY CONCEPTS

	<u>PAGE NUMBER</u>
APPLICATION SOFTWARE	12.1
SPECIALIZED PREWRITTEN APPLICATION	12.1
SOFTWARE PACKAGES	
GENERALIZED PREWRITTEN APPLICATION	12.1, 12.3
SOFTWARE PACKAGES	
APPLICATION SOFTWARE DEVELOPMENT	12.1
TOOLS	
PERSONAL FINANCIAL MANAGEMENT	12.2
PACKAGES	
WORD PROCESSING PACKAGE	12.4
SPELLING CHECKER	12.4

### PRACTICE TEST

1. The two types of application software packages are (fill in the blanks below):

\_\_\_\_\_ prewritten application software

\_\_\_\_\_ prewritten application software

2. Spelling checker software:

- a) checks individual words in the text for correct spelling.
- b) scans the entire text for correct spelling of words.
- c) checks for correct spelling and punctuation.
- d) both a and b are correct.

3. Place a check mark next to the two items that are guidelines for purchasing prewritten software packages.

\_\_\_\_\_ Obtain the best price.

\_\_\_\_\_ Verify that a spelling checker is included with the software.

\_\_\_\_\_ Ensure that the software documentation is adequate.

\_\_\_\_\_ Purchase the software only from a major distributor.

### **PRACTICE TEST (continued)**

4. A word processing package is an example of:
- a) a generalized package.
  - b) a specialized package.
  - c) a software development tool.
  - d) a programming language.

## WORDSTAR: CREATING A DOCUMENT

## LESSON 15B

### OBJECTIVES

- Start up the WordStar program.
- Open a document file and name it.
- Turn Insert mode on and off.
- Enter text using both hard returns and word wrap.
- Turn margin justification on and off.
- Reform a text.
- Save a file.

### TO COMPLETE LESSON 15B

- STEP 1      Review KEY CONCEPTS for Lesson 15B in this study guide.
- STEP 2      Load MS-DOS (refer to Lesson 14B).
- STEP 3      Read and execute the instructions on pages C.1 through C.23 in the textbook.
- If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 15B.
- STEP 4      After completing page C.23, exit WordStar by pressing **X**.
- STEP 5      Review the COMMAND SUMMARY for Lesson 15B.
- STEP 6      Take the PRACTICE TEST for Lesson 15B.
- STEP 7      Score the PRACTICE TEST for Lesson 15B.

### KEY CONCEPTS

#### PAGE NUMBER

OPENING MENU	C.4
FILE DIRECTORY INDICATOR	C.4
TOGGLE SWITCH	C.5
EDITING	C.6
DOCUMENT FILE	C.6
CURSOR	C.7
MAIN MENU	C.8
RULER LINE	C.9
TEXT AREA	C.9
INSERT MODE	C.9
DEFAULT VALUE	C.9
ENTERING TEXT	C.11
FLAG COLUMN	C.13
WORD WRAP	C.14
HARD RETURN	C.15
SOFT RETURN	C.15
RIGHT JUSTIFIED TEXT	C.16
SOFT SPACES	C.16
HARD SPACES	C.16
ONSCREEN MENU	C.16
REFORM COMMAND	C.19
SAVING A FILE	C.22
BLOCK MENU	C.22

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook

#### Loading WordStar

Be sure you have:

- loaded MS-DOS.
- properly inserted your WordStar disk into the A: drive. The label side should be face up with the write-protect notch on the left as you insert the disk.
- closed the disk drive door.
- at the A> prompt, typed **WS** and pressed the Enter key.

For other problems loading WordStar, re-boot the machine using CTRL-ALT-DEL and start again.

VOL II  
41

#### Opening a Document File

Be sure you have:

- pressed **D** on the Opening Menu.
- pressed the Enter key after typing your file name.

For other problems opening a document file, press the **Esc** key and try opening a document file again.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Entering Text

If you make typing errors:

- be sure the Insert mode is off by looking at the top, right-hand corner of your screen. If it's on, press the key labeled **Ins**.
- use the cursor arrow keys (left, right, up, or down) to move to the location of your error, and then retype the text correctly.

If you pressed the Enter key instead of using word wrap:

- use the cursor arrow keys to move to the last character or space in the line that has the unwanted hard return.
- press **^G** to delete the hard return.
- press **Ins** to turn Insert mode on and press the **Space Bar** to place a space between the two words at the end of the line.
- press **Ins** to turn Insert mode off again.
- press **^B** to reform the text.

For other problems entering text, you might try:

- (1) ignoring your errors,
- (2) deleting everything you've typed, or
- (3) pressing **^KQ** followed by **Y**, then starting over.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Turning Off Margin Justification, Reforming Text

If reforming your text does NOT result in removing the right justification, be sure you have:

- turned off right justification by pressing **^OJ**.
- looked to check that justification is OFF by pressing **^O** and checking the Onscreen Menu option: "J JUSTIFY now \_\_\_\_". Next, press the **Space Bar**.
- reformed your text by pressing **^B**'s with the cursor under the first character of the paragraph (the "T" in the word "TO:").

#### Saving a File

If you don't return to the Opening Menu at the conclusion of the save process, be sure you have:

- pressed **^KD** from the Main Menu, or **D** from the Block Menu (**^K**).

For other problems saving a file, try pressing the **Esc** key and beginning the save process again. You can also try pressing **^U** and beginning again.



### COMMAND SUMMARY

OPENING MENU COMMANDS	
COMMAND	EFFECT
F D	File directory on/off Open a document file

MAIN MENU COMMANDS	
COMMAND	EFFECT
^V or Ins key Enter key ^O ^B ^E or Up Arrow key ^K	Insert mode on/off Insert hard return Load Onscreen Menu Reform paragraph Move cursor up one line Load Block Menu

ONSCREEN MENU COMMANDS	
COMMAND	EFFECT
^OJ Space Bar	Justify on/off Return to Main Menu

BLOCK MENU COMMANDS	
COMMAND	EFFECT
^KD	Save file and return to Opening Menu

### PRACTICE TEST

1. A user tries to open a new document file named MYFILE. He performs the following steps:

- 1) Loading WordStar by typing **WS**
- 2) Pressing the Enter key
- 3) Pressing **D**
- 4) Typing **MYFILE**

Nothing happens! What has the user done wrong?

- a) He should have pressed **F** instead of **D**.
- b) He didn't press the Enter key after typing **MYFILE**.
- c) He didn't start WordStar properly.
- d) He didn't press the Enter key after pressing **D**.

VOL II  
45

2. Insert mode is turned on and off by pressing:

- a) **^V**.
- b) **^B**.
- c) **Ins**.
- d) either a or c.

3. How does one reform a paragraph?

- a) By pressing **^B** with the cursor at the end of the paragraph
- b) By pressing **^B** with the cursor at the beginning of the paragraph
- c) By pressing **^B** with the cursor at any location
- d) By pressing **^B** with Insert mode on

GO TO THE NEXT PAGE...

### **PRACTICE TEST (continued)**

4. What is the command to save a file and return to the Opening Menu?
  - a) ^OJ
  - b) Space Bar
  - c) ^KD
  - d) D

### OBJECTIVES

- Print a file.
- Correct typing errors.
- Move the cursor up, down, left, and right within a document.
- Reform a text.

### TO COMPLETE LESSON 15C

STEP 1      Review KEY CONCEPTS for Lesson 15C on the next page of this study guide.

STEP 2      Load MS-DOS (refer to Lesson 14B)

STEP 3      Load WordStar to obtain the Opening Menu.

STEP 4      Read and execute the instructions on pages C.24 through C.35 in the textbook.

If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 15C.

STEP 5      Save your file again by pressing **^KD**.

STEP 6      Exit WordStar by pressing **X**.

STEP 7      Review the COMMAND SUMMARY for Lesson 15C.

STEP 8      Take the PRACTICE TEST for Lesson 15C.

STEP 9      Score the PRACTICE TEST for Lesson 15C.

## PRINTING & CURSOR MOVEMENT

## LESSON 15C

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
PRINTING A FILE	C.24
PRINTED REPORT	C.26
CORRECTING ERRORS	C.27
BACKSPACING AND TYPING OVER TEXT	C.27
CURSOR DIAMOND	C.30
ADDITIONAL CURSOR MOVEMENT	C.30
COMMANDS	

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook

#### Printing a File

Be sure you have:

- properly inserted your WordStar disk into the A: drive. The label side should face up with the write-protect notch on the left as you insert the disk.
- closed the disk drive door.
- properly started the WordStar program by typing **WS** and pressing the Enter key at the A> prompt.
- typed **P** at the Opening Menu.
- properly typed the name of the file: **MEMO**
- pressed **Esc** after typing your file name.
- turned on the PRINTER and loaded it with paper.

VOL II  
49

For other problems printing a file, try:

- (1) pressing **^U** followed by the **Esc** key and beginning again,
- (2) pressing **X** to exit and restarting the program, or
- (3) re-booting the machine with CTRL-ALT-DEL and starting again.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Correcting Errors

If you have trouble correcting errors, be sure that:

- Insert mode is off. If not, press the **Ins** key.
- you move the cursor up, down, left, or right to the point of the error and retype over it.

For other problems correcting errors, abandon your edits by pressing **^KQ**, pressing **Y**, and then re-opening the MEMO file again.

VOL II  
50

#### Reforming Text

Be sure you have:

- placed the cursor at the beginning of the paragraph to be reformed.
- pressed **^B** as many times as needed to reform the paragraph.

### COMMAND SUMMARY

OPENING MENU COMMANDS	
COMMAND	EFFECT
P P X	Print a file Stop printing a file Exit WordStar and return to the operating system

MAIN MENU COMMANDS	
COMMAND	EFFECT
^S or Left Arrow key	Move cursor one space to the left
^D or Right Arrow key	Move cursor one space to the right
^X or Down Arrow key	Move cursor down one line
^F	Move cursor one word to the right
^A	Move cursor one word to the left



### PRACTICE TEST

1. When trying to print a file, what does the Esc key do?
  - a) It cancels the request to print.
  - b) It stops printing in the middle of the document.
  - c) It allows the program to start printing the document.
  - d) It is an alternative to pressing **P**.
  
2. Pressing the letter **P** requests that a file be printed. How do we normally stop the printing after it has begun?
  - a) By pressing **Esc**
  - b) By pressing **P** again
  - c) By turning off the printer
  - d) Printing cannot be stopped after it has begun.
  
3. How can we backspace over a typing error just made?
  - a) By pressing the Left Arrow key
  - b) By pressing the Right Arrow key
  - c) By pressing **^S**
  - d) Both a and c are correct
  
4. It is best to have Insert mode \_\_\_\_\_ when correcting errors using the cursor arrow keys.
  - a) on
  - b) off
  - c) toggled
  - d) none of the above

You have just finished Lessons 15A, 15B, and 15C.

Before taking this unit questionnaire, read the "Chapter Summary" on page 12.11 in the textbook, points 1 - 13, and review pages C.1 through C.36.

### INSTRUCTIONS

- STEP 1 Take an answer card from the pocket at the back of the notebook.
- STEP 2 Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3 Take your unit questionnaire.

VOL II  
53

### QUESTIONS

1. The two categories of application software available for purchase are:
  - a) specialized prewritten application software packages and programming languages.
  - b) specialized prewritten application software packages and generalized prewritten application software packages.
  - c) generalized prewritten application software packages and fourth generation software.
  - d) FORTRAN and COBOL.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. A software package often used in conjunction with a word processor is a:
  - a) syntax checker.
  - b) paragraph analyzer.
  - c) spelling checker.
  - d) automatic page numberer.
  
3. The difference between generalized prewritten application software packages and specialized prewritten application software packages is:
  - a) specialized software packages are used in many different application areas.
  - b) generalized software packages are used in many different application areas.
  - c) specialized software packages are written "in-house", and generalized software packages are written by software vendors.
  - d) generalized software packages are written "in-house", and specialized software packages are written by software vendors.
  
4. Three guidelines for purchasing prewritten software packages are:
  - a) verify that software performs desired task, purchase software from reliable vendor, and obtain the best price.
  - b) obtain the best price, purchase software from reliable vendor, and make sure software is a specialized package.
  - c) verify that software performs desired task, purchase software from reliable vendor, and look for extensive documentation.
  - d) none of the above.

### QUESTIONS (continued)

5. To open a document file in WordStar, press:
- a) **F**
  - b) **B**
  - c) **D**
  - d) **X**
6. What does word wrap do?
- a) It corrects spelling errors.
  - b) It moves a word to the next line when it extends too far on a line.
  - c) It creates a new blank line so that words can be inserted after a hard return.
  - d) It inserts a hard return.
7. An indicator that alternates going on and off by pressing the same key is called a(n):
- a) on/off indicator.
  - b) command.
  - c) default indicator.
  - d) toggle switch.
8. The Main Menu in WordStar is active when:
- a) WordStar is first started.
  - b) **^O** is pressed.
  - c) a file is being edited or created.
  - d) the user is about to issue the command to open a document file.

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSONS 15A - 15C

### QUESTIONS (continued)

9. Which is the sequence of steps that would correctly lead to a printed report of the document file called MEMO?
- a) Pressing **P** and typing **MEMO**
  - b) Pressing **P**, typing **MEMO**, and pressing the Enter key
  - c) Pressing **D**, typing **MEMO**, and pressing the Enter key
  - d) Pressing **P**, typing **MEMO**, and pressing the **Esc** key
10. The cursor arrow keys move the cursor left, right, up, or down. They function the same way as the commands:
- a) ^S, ^D, ^E, ^X.
  - b) ^S, ^D, ^E, ^B.
  - c) ^O, ^D, ^E, ^X.
  - d) ^S, ^D, ^F, ^A.

# COMPULIT - Unit 15



## PROJECT

## LESSON 15A-15C

Below is a sample document with several typing errors circled. Using Wordstar, create a document, type in the following contents, and correct the spelling errors. Save and print out the document.

### The Importance of Computers for Your Education

The following quotes are from Compter Fundamentals with Application Software.

"The uses for computers are expanding at a very rapid rate. Virtually every business, government agency, public agency such as hospitals, and an increasingly greater number of homes all have computers. Indeed it has been predicted by some experts that by the year 1995 as many as 100 million computer could be in use.... Their increased use and influence will affect every person in the world."

"The infomation processing industry has emerged as one of the world's largest industries, with sales of computer hardwae and software, and services exxxceeding \$100 billion annually. The growth in this industry has resulted in numerous job opportunities in many different categories with varying educational requirements."

VOL II  
56A

**When you have finished, submit a printout of the document to NTS along with your Answer Card for Unit 15.**



### OBJECTIVES

- Re-open a document file.
- Insert text into a document.
- Move the cursor around a document.
- Delete characters, words, and lines in a document.
- Use the two dot commands presented in the lesson.
- Set and change margins.
- Reform text, by paragraph and globally.
- Save a file.

### TO COMPLETE LESSON 16A

VOL II  
57

STEP 1      Review KEY CONCEPTS for Lesson 16A.

STEP 2      Load MS-DOS (refer to Lesson 14B).

STEP 3      Read and execute the instructions on pages C.38 through C.54 in the textbook.

If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 16A.

GO TO THE NEXT PAGE...



### TO COMPLETE LESSON 16A (continued)

- STEP 4      After completing page C.54, exit WordStar by pressing **X**.
- STEP 5      Review the COMMAND SUMMARY for Lesson 16A.
- STEP 6      Take the PRACTICE TEST for Lesson 16A.
- STEP 7      Score the PRACTICE TEST for Lesson 16A.

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
DELETION	C.42
FORMATTING A PRINTED REPORT	C.45
DOT COMMANDS	C.45
SETTING MARGINS	C.47
REFORMING THE TEXT	C.49
QUICK MENU	C.50
SAVING AND PRINTING THE FILE	C.52
BACKUP FILE	C.53

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading WordStar

Be sure you have:

- loaded MS-DOS.
- properly inserted your WordStar disk into the A: drive. The label side should face up with the write-protect notch on the left as you insert the disk.
- closed the disk drive door.
- at the A> prompt, typed **WS** and pressed the Enter key.

For other problems loading WordStar, re-boot the machine with CTRL-ALT-DEL and start again.

VOL II  
60

#### Opening a Document File

Be sure you have:

- pressed **D** on the Opening Menu.
- pressed the Enter key after typing your file name.

For other problems opening a document file, press the **Esc** key and try opening a document file again.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Inserting Text

If you accidentally type over previously entered text:

- turn Insert mode ON by pressing the key labeled **Ins**. Look at the top-right portion of your screen to be sure that Insert mode is indeed on. Retype what you accidentally erased.

If your text doesn't look like the example in Figure C-49, page C.40:

- be sure you have pressed the Enter key with Insert mode on and with the cursor positioned under the "T" in the word "TO:". Use the cursor arrow keys to move to the correct location.

For other problems inserting text, just make sure Insert mode is ON before you type. Use the arrow keys to move your cursor around the screen, and delete individual errors by pressing **^G** with the cursor under the character to be deleted..

VOL II  
61

#### Deleting Text

Be sure that:

- you use **^G** to delete a single character, and **^T** to delete an entire word.
- you do NOT hold your finger down on either **^G** or **^T**, because this will cause several characters or words to be deleted. If this has occurred, turn on Insert mode by pressing the **Ins** key and re-insert the text you deleted.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

- in the case of ^G for deleting a single character, your cursor is positioned directly under the character to be deleted.
- in the case of ^T for deleting a word, your cursor is positioned directly under the first character of the word.

For other problems deleting text, or if you delete a lot of text unintentionally, you can abandon your changes to the file by pressing ^KQ, then pressing Y and starting over again. All edits to your file will be erased, but you'll be able to start over with your previously saved file.

### Dot Commands

VOL II  
62

If you encounter problems with dot commands, be sure that:

- your dot commands (.mt12 and .op) appear at the beginning of your file and not elsewhere.
- you have no spaces between the dot and the first letter of the command.
- there is no other text on the same line as either of your dot commands. If there is, turn Insert mode on, then press the Enter key with the cursor positioned under the first character of the additional text on the line.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

- there are no blank lines above your dot commands in the text. Check this by moving your cursor to the line with the word "DATE:" on it and look at the top of the screen to be sure you're on LINE 1. If there is a blank line above your dot commands, move the cursor to that line and press **^Y**.

For other problems with dot commands, carefully follow the steps on pages C.45 and C.46. If you have no success, abandon your file by pressing **^KQ**, then **Y**, and start again.

### Setting Margins

Be sure that:

- you have properly entered the set margin command by pressing **^OL** or **^OR**.
- you have specified a number for the margin column AND have pressed the Enter key to record your selection.

For other problems with margins, repeat the steps for setting the left and/or right margins as given on pages C.47 through C.49.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Reforming Text

To reform a paragraph of text:

- make sure your cursor is under the first character in the paragraph to be reformed.
- press **^B** to reform the paragraph. If the cursor stops somewhere within the paragraph to suggest hyphenation, continue to press **^B** until you reach the end of the paragraph.

To reform a series of paragraphs of text:

- make sure your cursor is under the first character in the first paragraph to be reformed.
- press **^QQ** and **^B**. If the cursor stops for hyphenation, press **^B** until you reach the end of the paragraph. Repeat the **^QQ ^B** sequence for the other paragraphs.

For other problems reforming text, check that your margins and justification have been appropriately set, then move the cursor to the beginning of your text by pressing the **F9** function key and reform the text by pressing **^B** or **^QQ ^B**.

#### Saving a File

If you don't return to the Opening Menu at the conclusion of the save process, be sure you have:

- pressed **^KD** from the Main Menu, or **D** from the Block Menu (**^K**).

For other problems saving a file, try pressing the **Esc** key and beginning the save process again. You can also try pressing **^U** followed by the **Esc** key and beginning again.

### COMMAND SUMMARY

MAIN MENU COMMANDS	
COMMAND	EFFECT
^G	Delete one character at cursor
^T	Delete one word
^Y	Delete line on which cursor is located
Delete key	Delete character to the left of cursor
F9	Move cursor to beginning of file

QUICK MENU COMMANDS	
COMMAND	EFFECT
^QD	Move cursor to end of line
^QS	Move cursor to beginning of line
^QY	Delete all characters to the right of cursor on same line
^QDelete key	Delete all characters to the left of cursor on same line
^QQ	Repeat next command until key is pressed

ONSCREEN MENU COMMANDS	
COMMAND	EFFECT
^OL	Set left margin
^OR	Set right margin

DOT COMMANDS	
COMMAND	EFFECT
.MTnn	Set top margin on print page to nn
.OP	Do not print page numbers



### PRACTICE TEST

1. Which command below will delete a word?
  - a) ^T
  - b) ^G
  - c) ^Y
  - d) Delete key
  
2. To set the right margin to 70, which sequence below would you use?
  - a) Press ^OL, type 70, press the Enter key.
  - b) Press ^OR, type 70, press the Enter key.
  - c) Press ^OR, and type 70.
  - d) Just type 70, then press the Enter key.
  
3. ^B will reform a paragraph. Pressing ^QQ before pressing ^B will:
  - a) abort the reform command.
  - b) reform the paragraph more quickly.
  - c) allow hyphenation.
  - d) reform multiple paragraphs.

### PRACTICE TEST (continued)

4. The dot command .OP causes:
- a) page numbers to be printed.
  - b) pages numbers NOT to be printed.
  - c) a top margin to be inserted.
  - d) none of the above.
5. Which command below does NOT result in changing the text in some way?
- a) ^T
  - b) ^QY
  - c) D
  - d) Delete key

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

## WORDSTAR: ADDITIONAL FEATURES

## LESSON 16B

### OBJECTIVES

- Access and use the Help Menu.
- Underline selected text.
- Bold print selected text.
- Center selected text.
- Use the tab key and set temporary margins.
- Save a file and return to editing.

### TO COMPLETE LESSON 16B

VOL II  
68

- STEP 1      Review KEY CONCEPTS for Lesson 16B on the next page of this study guide.
- STEP 2      Load MS-DOS (refer to Lesson 14B).
- STEP 3      Read and execute the instructions on pages C.57 through the top of C.70 in the textbook.
- If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 16B.
- STEP 4      Save your file and exit WordStar by pressing ^KX.
- STEP 5      Review the COMMAND SUMMARY for Lesson 16B.
- STEP 6      Take the PRACTICE TEST for Lesson 16B.
- STEP 7      Score the PRACTICE TEST for Lesson 16B.

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
HELP MENU	C.58
UNDERLINING AND BOLD PRINTING	C.60
PRINT CONTROL CHARACTER	C.60
PRINT MENU	C.61
TABBING AND INDENTING PARAGRAPHS	C.64
TEMPORARY LEFT MARGIN	C.65
SAVING DOCUMENTS	C.67

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading WordStar

Refer to "TROUBLESHOOTING", Lesson 16A.

#### Opening a Document File

Be sure you have:

- pressed **D** on the Opening Menu.
- pressed the Enter key after typing your file name.

For other problems opening a document file, press the **Esc** key and try opening a document file again.

VOL II  
70

#### Help Menu

If you have trouble accessing the Help Menu, be sure that:

- a document file has been opened by pressing **D** followed by typing the file name and pressing the Enter key.
- you have pressed **^J** from the Main Menu and have selected an option from the Help Menu by pressing a letter.

If you have trouble exiting the Help Menu, be sure that:

- you press the **Space Bar**, or follow the instructions indicated on the Help screens.

For other problems with the Help Menu, try pressing **^U** followed by the **Esc** key, or try pressing the **Space Bar**.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Underlining and Bold Printing

Remember: you must signal both the START POINT for underlining (or bold printing), AND the END POINT:

- press the **F5** function key for underlining (or **F6** key for bold printing) both at the start of the selected text AND AGAIN after the last character of the selected text.

If you don't see the print control characters on the screen that signal underlining (^S) or bold printing (^B):

- check to see if print display is off. Press **^O** and look at the Onscreen Menu. If you see: "D Prnt disp now OFF", press **D** to turn it back on.
- if print display is already on, you must re-enter your print control characters for underlining and/or bold printing by following the instructions on pages C.60 through C.64 in the textbook.

For other problems with underlining and bold printing, you might:

- (1) try pressing **^U** followed by the **Esc** key
- (2) delete your **^S** or **^B** print control characters and begin again
- (3) abandon your edits by pressing **^KQ** then **Y**, and open the file again.

### TROUBLESHOOTING (continued)

#### Tabbing and Indenting

To place text in a temporary left margin, be sure that:

- you have pressed the **F2** function key one or more times before you begin typing.

To terminate the temporary left margin:

- press the Enter key.

If you have created a larger temporary left margin than you wanted:

- press the Enter key, then press the **F2** function key one or more times as desired.

#### Saving a File and Resuming Editing

If you don't return after saving the file to the point in the text where you left off, be sure that:

- you pressed **^KS**.
- you pressed **^QP** after pressing **^KS**.

For other problems saving a file to resume editing, check your text thoroughly, and if you DO wish to save your edits, press **^KS** followed by **^QP**, or press **^KD**. If you wish to abandon your edits and begin again, press **^KQ**, then **Y**, then open your file again.

### COMMAND SUMMARY

MAIN MENU COMMANDS	
COMMAND	EFFECT
^J	Load Help Menu
F5 Function key	Start/End underlining
^P	Load Print Menu
F6 Function key	Start/End bold printing
Tab key or ^I	Move cursor to next tab stop
F2 Function key	Set temporary left margin

HELP MENU COMMANDS	
COMMAND	EFFECT
M	Display Margins and Tabs information

PRINT MENU COMMANDS	
COMMAND	EFFECT
^PS	Start/End underlining
^PB	Start/End bold printing

GO TO THE NEXT PAGE...



### COMMAND SUMMARY (continued)

ONSCREEN MENU COMMANDS	
COMMAND	EFFECT
^OC	Center text on cursor line
^OD	Display print control characters on/off
^OG	Set temporary left margin

BLOCK MENU COMMANDS	
COMMAND	EFFECT
^KS	Save file and return to document
^KX	Save file and exit WordStar
^KQ	Abandon file, do not save

QUICK MENU COMMANDS	
COMMAND	EFFECT
^QP	Return to cursor location prior to command execution

### PRACTICE TEST

1. A user tries to underline the title of a text. Her attempt is below. What has she done wrong (if anything)?

^SLICENSING AGREEMENT

- a) She should have used the F6 key (to establish a ^B in the text).
- b) She didn't hide the print control character by pressing ^OD.
- c) She should have pressed the **F5** key again after the word "AGREEMENT" (to establish another ^S in the text).
- d) She has not done anything wrong. This is correct.

VOL II  
75

2. If you were going to create an outline and needed to add a lot of left indents to your document, which command below would be most useful?

- a) ^OJ
- b) ^OG
- c) ^OC
- d) ^OD

3. Bold printing is accessed by:

- a) the F6 function key.
- b) pressing ^PB.
- c) pressing ^PS.
- d) both a and b are correct.

GO TO THE NEXT PAGE...

### **PRACTICE TEST (continued)**

4. Which command(s) save(s) a document and cause(s) a return to the previous cursor position?
- a) ^KS
  - b) ^KD, ^QP
  - c) ^KS, ^QP
  - d) ^KX

### OBJECTIVES

- Mark blocks of text.
- Perform the following operations on blocks: delete, move, hide markers, write to disk, and read from disk.
- Use the find/replace commands.
- Use appropriate find/replace options.

### TO COMPLETE LESSON 16C

STEP 1      Review KEY CONCEPTS for Lesson 16C on the next page of this study guide.

STEP 2      Load MS-DOS (refer to Lesson 14B).

STEP 3      Load WordStar to obtain the Opening Menu.

STEP 4      Read and execute the instructions on pages C.70 through C.80 in the textbook.

If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 16C.

STEP 5      Review the COMMAND SUMMARY for Lesson 16C.

STEP 6      Take the PRACTICE TEST for Lesson 16C.

STEP 7      Score the PRACTICE TEST for Lesson 16C.

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
BLOCK DELETE	C.70
BLOCK MARKER	C.72
BLOCK OPERATIONS	C.73
BLOCK MOVES	C.74
FIND AND REPLACE	C.77
OPTIONS	C.79

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading WordStar

Refer to "TROUBLESHOOTING", Lesson 16A.

#### Opening a Document File

Be sure you have:

- pressed **D** on the Opening Menu.
- pressed the Enter key after typing your file name.

For other problems opening a document file, press the **Esc** key and try opening a document file again.

VOL II  
79

#### Block Commands

If you have trouble setting blocks, be sure that:

- you have marked the beginning of the block by pressing the **F7** key, AND the end of the block by pressing the **F8** key.

If the block is not displayed with lower intensity letters:

- try pressing **^KH** in case you have "hidden" your block.
- look for the **<B>** and/or **<K>** markers in the text. Perhaps they have not been set correctly. Try resetting the beginning and end block markers according to the instructions on pages C.72 and C.73 in the textbook.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

If you delete a block accidentally:

- immediately abandon your file by pressing **^KQ** followed by **Y**. Re-open your document file again. You'll see that your deletion has not been registered!

If you issue a block command (**^KY**, **^KV**, **^KW**, **^KR**) and nothing happens, or you receive a message from WordStar:

- your block may be hidden. Press **^KH** and try the command again.
- your block may not be marked as you expected. Try resetting the block markers for your selected text again by following the instructions on pages C.72 and C.73 in the textbook.
- follow the instructions in the message from WordStar.

To hide and disable a block:

- press **^KH**.

For other problems with block commands:

- (1) try remarking the block with **F7** and **F8**
- (2) make sure your block is not hidden
- (3) press **^U** followed by the **Esc** key, and if all else fails
- (4) abandon your file by pressing **^KQ**, then **Y**, and start again.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Find and Replace Commands and Options

If you simply wish to locate text within the file:

- use the find command, ^QF, and specify your text string and any options you need.

If you wish to replace all occurrences of one text string with another:

- use the replace command, ^QA, and specify the text to change, what it should be changed to, and any options you need.

If WordStar does not find the text you requested:

- you may not have entered the proper options. Review the options on pages C.79 through C.81 in the textbook. Repeat the command with the appropriate options.
- your cursor may not be in a good location to carry out the search. For forward searches, press the **F9** key to move the cursor to the beginning of the file. It's best to start the search from there. If you are using the "B" option for a backward search, move the cursor to the end of the file first by pressing the **F10** function key.

For other problems with find/replace commands and options, try starting the process again. Press **^U** followed by the **Esc** key and re-issue the find/replace command. Check to be sure you enter the correct option(s).



### COMMAND SUMMARY

MAIN MENU COMMANDS	
COMMAND	EFFECT
F7 Function key F8 Function key ^L	Mark block beginning Mark block end Continue find/replace operation

BLOCK MENU COMMANDS	
COMMAND	EFFECT
^KB	Mark block beginning
^KK	Mark block end
^KY	Delete marked block
^KV	Move marked block
^KH	Hide block markers on/off
^KW	Write marked block to disk
^KR	Read block from disk

### COMMAND SUMMARY (continued)

QUICK MENU COMMANDS	
COMMAND	EFFECT
^QF	Find text in file
^QA	Find and replace text in file

FIND/REPLACE OPTIONS	
OPTION	EFFECT
B	Proceed backward with find operation
W	Find only whole words
U	Ignore upper/lower case differences
N	Replace without asking
G	Replace in entire file

### PRACTICE TEST

1. Place a check mark beside the items below which are block commands:

\_\_\_\_\_ ^KY

\_\_\_\_\_ ^QS

\_\_\_\_\_ ^KV

\_\_\_\_\_ ^QA

\_\_\_\_\_ ^QD

\_\_\_\_\_ ^KR

2. ^QF finds specific text in a file, while ^QA:

- a) finds only whole words in a file.
- b) will also replace text in a file.
- c) will only find text in a file.
- d) is a block command.

GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

3. Choose the item below that is NOT a find/replace option:
- a) B
  - b) W
  - c) D
  - d) G
4. If you wanted to find the word "thing" everywhere in a text (but not words like "things" or "nothing", etc.), replace it with the word "object" without asking, AND you wanted to find the word whatever its case (both upper and lower), which command and options would you select?
- a) ^QA, options NGUW
  - b) ^QF, options NGUW
  - c) ^QA, options NGU
  - d) ^QF, options NGU
5. Which command will move a block of text?
- a) ^KH
  - b) ^KV
  - c) ^KB
  - d) ^KW

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

## UNIT QUESTIONNAIRE

## LESSONS 16A - 16C

You have just finished Lessons 16A, 16B, and 16C.

Before taking this unit questionnaire, review pages C.38 through C.80 in the textbook.

## INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

VOL II  
86

## QUESTIONS

1. We move the cursor to the beginning of the file by pressing:
  - a) F9
  - b) F2
  - c) F7
  - d) F5
  
2. Underlining is accessed by:
  - a) F5
  - b) ^PB
  - c) F6
  - d) ^QP

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

3. A user issues the command ^QF to find a word. To find the next occurrence of the word, the user should press:
- a) ^L.
  - b) ^O.
  - c) ^B.
  - d) ^QA.
4. Which find/replace option below will find a word regardless of whether it is upper or lower case?
- a) W
  - b) B
  - c) C
  - d) U
5. The three commands to save files in WordStar are:
- a) ^KD, ^KS, ^KK.
  - b) ^KS, ^KX, ^KR.
  - c) ^KQ, ^KD, ^KS.
  - d) ^KD, ^KS, ^KX.
6. Titles are usually centered. Which command in WordStar will center a title?
- a) ^OR
  - b) ^C
  - c) ^OC
  - d) ^OD

### QUESTIONS (continued)

7. Three commands to delete text are:

- a) ^G, ^Y, ^B.
- b) ^G, ^T, ^L.
- c) ^T, ^G, ^Y.
- d) Delete key, ^G, ^B.

8. Left and right margins are set with:

- a) ^L and ^R.
- b) ^OL and ^OR.
- c) ^QL and ^QR.
- d) ^KL and ^KR.

VOL II  
88

9. A block has been marked by pressing **F7** and **F8**. How can we hide the block so it won't be accidentally erased?

- a) By pressing ^KK
- b) By pressing F7 again
- c) By pressing ^KH
- d) None of the above

10. Which command below is NOT used for cursor movement?

- a) ^S
- b) ^QS
- c) ^QD
- d) ^QY

# **COMPULIT - Unit 16**



## **PROJECT**

## **LESSON 16A-16C**

Complete the following two assignments:

1. Complete Student Assignment 8, Creating a Document, on page C.82 in your textbook.

**Submit a printout to NTS along with your Answer Card for Unit 16.**

2. Complete Student Assignment 9, Block Commands and Find/Replace, on page C.82 in your textbook.

**Submit a printout to NTS along with your Answer Card for Unit 16.**



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### ANSWERS TO PRACTICE TEST

1. Any one of the following responses is correct.

<b>1 (one)</b>	and	<b>L</b>
<b>0 (zero)</b>	and	<b>O</b>
<b>/</b>	and	<b>\</b>

If you missed this question, go back and review Using the Keyboard in this lesson.

2. **C**

If you missed this question, go back and review Handling Floppy Disks in this lesson.

3. **C**

If you missed this question, go back and review Using the Keyboard in this lesson.

4. **D**      B drive  
**A**      On/off switch  
**C**      A drive  
**B**      Read/write light

If you missed this question, go back and review System Components.

### ANSWERS TO PRACTICE TEST

1. **dir b:** press Enter key  
or  
**b:** press Enter key  
**dir** press Enter key

If you missed this question, go back and review Instructions:  
Viewing files in this lesson.

2. **D**

If you missed this question, go back and review Instructions:  
Reloading MS-DOS in this lesson.

3. **C**

If you missed this question, go back and review Instructions:  
Copying files in this lesson.

4. **B**

If you missed this question, go back and review Instructions:  
Formatting files in this lesson.

5. **A>copy b:report.doc a:** press Enter or  
**A>copy b:report.doc** press Enter  
  
**B>copy b:report.doc a:** press Enter or  
**B>copy report.doc a:** press Enter

If you missed this question, go back and review Instructions:  
Copying Files in this lesson.

### ANSWERS TO PRACTICE TEST

1. You should have placed the following terms in the blanks:

Specialized  
Generalized

The terms are correct in either order.

If you missed this question, go back and review page 12.1 in the textbook.

2. **D**

If you missed this question, go back and review pages 12.3 through 12.5 in the textbook.

VOL II  
A3

3. ☒ **Obtain the best price.**

☐ Verify that a spelling checker is included with the software.

☒ **Ensure that the software documentation is adequate.**

☐ Purchase the software only from the major distributor.

If you missed this question, go back and review pages 12.5 and 12.6 in the textbook.

4. **A**

If you missed this question, go back and review pages 12.3 through 12.5 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review page C.6 and C.7 in the textbook.

2. **D**

If you missed this question, go back and review pages C.9 through C.11 in the textbook.

3. **B**

If you missed this question, go back and review pages C.19 through C.22 in the textbook.

4. **C**

If you missed this question, go back and review pages C.22 and C.23 in the textbook.

### **ANSWERS TO PRACTICE TEST**

1. **C**

If you missed this question, go back and review pages C.24 and C.25 in the textbook.

2. **B**

If you missed this question, go back and review page C.25 in the textbook.

3. **D**

If you missed this question, go back and review pages C.27 through C.29 in the textbook.

**VOL II  
A5**

4. **B**

If you missed this question, go back and review page C.27 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **A**

If you missed this question, go back and review pages C.42 through C.45 in the textbook.

2. **B**

If you missed this question, go back and review pages C.47 through C.49 in the textbook.

3. **D**

If you missed this question, go back and review pages C.49 through C.52 in the textbook.

4. **B**

If you missed this question, go back and review page C.46 in the textbook.

5. **C**

If you missed this question, go back and review page C.39 and pages C.42 through C.45 in the textbook.

### **ANSWERS TO PRACTICE TEST**

1. **C**

If you missed this question, go back and review page C.60 in the textbook.

2. **B**

If you missed this question, go back and review pages C.65 through C.67 in the textbook.

3. **D**

If you missed this question, go back and review page C.61 in the textbook.

**VOL II**  
**A7**

4. **C**

If you missed this question, go back and review pages C.67 through C.69 in the textbook.



### ANSWERS TO PRACTICE TEST

1. ☒ ^KY  
☐ ^QS  
☒ ^KV  
☐ ^QA  
☐ ^QD  
☒ ^KR

If you missed this question, go back and review pages C.70 through C.77 in the textbook.

VOL II  
A8

2. **B**

If you missed this question, go back and review pages C.77 through C.80 in the textbook.

3. **C**

If you missed this question, go back and review pages C.79 through C.81 in the textbook.

4. **A**

If you missed this question, go back and review pages C.77 through C.81 in the textbook.

5. **B**

If you missed this question, go back and review pages C.75 and C.76 in the textbook.

### ANSWERS TO PRACTICE TEST

1. C

If you missed this question, go back and review page 12.6 in the textbook.

2. a) Who uses these tools.  
b) Where these tools are used.  
c) What systems and procedures must be developed.

If you missed this question, go back and review page 12.10 in the textbook.

### ANSWERS TO PRACTICE TEST

1.
  - a) row
  - b) column
  - c) cell
  - d) current cell address
  - e) entry line

If you missed this question, go back and review pages A.2 and A.3 in the textbook.

2. **C**

If you missed this question, go back and review page A.4 in the textbook.

3. **D**

If you missed this question, go back and review page A.17 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review pages A.29 and A.30 in the textbook.

2. **D**

If you missed this question, go back and review pages A.31 and A.32 in the textbook.

3. **B**

If you missed this question, go back and review pages A.54 and A.55 in the textbook.

4. **C**

If you missed this question, go back and review page A.57 in the textbook.

### **ANSWERS TO PRACTICE TEST**

1. **B**

If you missed this question, go back and review page A.62 in the textbook.

2. **C**

If you missed this question, go back and review pages A.62 and A.63 in the textbook.

3. **A**

If you missed this question, go back and review page A.64 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review page 10.1 in the textbook.

2. **A**

If you missed this question, go back and review pages 10.2 through 10.6 in the textbook.

3. **C**

If you missed this question, go back and review pages 10.7 through 10.9 in the textbook.

4. **D**

If you missed this question, go back and review pages 10.11 and 10.12 in the textbook.

5. You should have placed the following terms in the blanks:

**Hierarchy**

**Network**

**Relational**

The terms are correct in any order.

If you missed this question, go back and review pages 10.7 through 10.11 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **D**

If you missed this question, go back and review page B.1 in the textbook.

2. **A**

If you missed this question, go back and review page B.6 in the textbook.

3. **B**

If you missed this question, go back and review pages B.22 through B.25 in the textbook.

4. **D**

If you missed this question, go back and review page B.4 in the textbook.

5. **A**

If you missed this question, go back and review page B.25 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **C**

If you missed this question, go back and review pages B.31 and B.32 in the textbook.

2. **B**

If you missed this question, go back and review page B.35 in the textbook.

3. **D**

If you missed this question, go back and review pages B.37 and B.38 in the textbook.

4. **C**

If you missed this question, go back and review pages B.37 through B.41 in the textbook.



### **ANSWERS TO PRACTICE TEST**

1. **C**

If you missed this question, go back and review pages B.52 and B.53 in the textbook.

2. **B**

If you missed this question, go back and review pages B.54 and B.55 in the textbook.

3. **C**

If you missed this question, go back and review pages B.56 and B.57 in the textbook.

4. **D**

If you missed this question, go back and review pages B.56 and B.57 in the textbook.

### ANSWERS TO PRACTICE TEST

1. ☒ insert  
☐ add  
☒ insert before  
☒ append  
☐ edit

If you missed this question, go back and review pages B.90 through B.93 in the textbook.

2. **B**

If you missed this question, go back and review page B.90 in the textbook.

3. **C**

If you missed this question, go back and review pages B.92 and B.93 in the textbook.

4. **D**

If you missed this question, go back and review pages B.95 and B.96 in the textbook.

5. **B**

If you missed this question, go back and review page B.96 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **C**

If you missed this question, go back and review page 13.1 in the textbook.

2. **C**

If you missed this question, go back and review page 13.8 in the textbook.

3. **B**

If you missed this question, go back and review page 13.2 in the textbook.

4. **D**

If you missed this question, go back and review page 13.3 in the textbook.

5. **B**

If you missed this question, go back and review page 13.10 in the textbook.

6. **A**

If you missed this question, go back and review page 13.2 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review  
INSTRUCTIONS: EXECUTING A PROGRAM in this lesson of  
the study guide.

2. **C**

If you missed this question, go back and review  
INSTRUCTIONS: EDITING A PROGRAM in this lesson of the  
study guide.

3. **C**

If you missed this question, go back and review  
INSTRUCTIONS: CREATING A PROGRAM in this lesson of  
the study guide.

4. **A**

If you missed this question, go back and review  
INSTRUCTIONS: CREATING A PROGRAM in this lesson of  
the study guide.

5. **D**

If you missed this question, go back and review  
INSTRUCTIONS: EXECUTING A PROGRAM in this lesson of  
the study guide.

### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review page 16.2 in the textbook.

2. **B**

If you missed this question, go back and review page 16.2 in the textbook.

3. **C**

If you missed this question, go back and review page 16.3 in the textbook.

4. **D**

If you missed this question, go back and review page 16.1 in the textbook.

5. **A**

If you missed this question, go back and review page 16.5 in the textbook.

6. **A**

If you missed this question, go back and review page 16.6 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **A**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE INPUT STATEMENT in this  
lesson of the study guide.

2. **D**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE LET STATEMENT in this  
lesson of the study guide.

3. **B**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE INPUT STATEMENT in this  
lesson of the study guide.

4. **B**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE LET STATEMENT in this  
lesson of the study guide.

5. **C**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE IF THEN ELSE STATEMENT  
in this lesson of the study guide.

6. **C**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE LET STATEMENT in this  
lesson of the study guide.

### ANSWERS TO PRACTICE TEST

1. input/output operations  
calculating, counting records, accumulating totals  
comparing operations  
interactive programming  
arrays and array searching

These terms are correct in any order.

If you missed this question, go back and review page 16.12 in the textbook.

2. **A**

If you missed this question, go back and review page 16.24 in the textbook.

3. **A**

If you missed this question, go back and review page 16.27 in the textbook.

4. **C**

If you missed this question, go back and review page 16.24 in the textbook.

### ANSWERS TO PRACTICE TEST

1. **A**

If you missed this question, go back and review  
INSTRUCTIONS: RENUMBERING A PROGRAM in this  
lesson of the study guide.

2. **B**

If you missed this question, go back and review  
INSTRUCTIONS: CREATING A LOOP in this lesson of the  
study guide.

3. **C**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE GO TO STATEMENT in this  
lesson of the study guide.



### ANSWERS TO PRACTICE TEST

1. **B**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE CLS STATEMENT in this  
lesson of the study guide.

2. **D**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE REM STATEMENT in this  
lesson of the study guide.

3. **D**

If you missed this question, go back and review  
INSTRUCTIONS: PRINTING A PROGRAM in this lesson of  
the study guide.

### **ANSWERS TO PRACTICE TEST**

1. **C**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE FOR NEXT STATEMENT in this  
lesson of the study guide.

2. **C**

If you missed this question, go back and review  
INSTRUCTIONS: USING THE FOR NEXT STATEMENT in this  
lesson of the study guide.

### ANSWERS TO PRACTICE TEST

1. You should have placed the following terms in the blanks:

Operational systems  
Management information systems  
Decision support systems

These terms are correct in any order.

If you missed this question, go back and review page 15.1 in the textbook.

2. **B**

If you missed this question, go back and review pages 15.4 and 15.5 in the textbook.

3. **D**

If you missed this question, go back and review page 15.3 in the textbook.

4. **A**

If you missed this question, go back and review pages 15.11 and 15.12 in the textbook.

### **ANSWERS TO PRACTICE TEST**

1. **C**

If you missed this question, go back and review pages 18.1 in the textbook.

2. a) **Education**

b) **Entertainment**

c) **Business**

If you missed this question, go back and review page 18.3 in the textbook.

**VOL II**  
**A27**

GO TO THE NEXT PAGE...

### ANSWERS TO PRACTICE TEST (continued)

3.

☒ Information collected and stored about individuals should be limited to the data necessary to carry out the function(s) of the business or government agency collecting the information.

☐ Information collected and stored about individuals should consist of primarily information likely to be transferred from one company's files to another company's files.

☒ After information has been collected, provisions must be made to restrict access to the information to only those employees who require access to perform their job duties.

☒ Personal information may be released to an organization outside of the organization who originally collected the data only if the individual agrees to such a disclosure.

☐ Information collected and stored about individuals that relates to the detection of fraud or violation of other laws must be secured from "hackers" using the Limited Access (LT) system.

☒ When information is collected and stored about individuals, an individual should have an opportunity to verify the accuracy of the data collected.

If you missed this question, go back and review page 18.8 in the textbook.

### OBJECTIVES

- Identify the general uses of application development tools.
- Describe three major issues related to the use of application development tools.

### TO COMPLETE LESSON 17A

- STEP 1 Read the major headings in the textbook, pages 12.6 through 12.10.
- STEP 2 Read pages 12.6 through 12.10 in the textbook.
- STEP 3 Review KEY CONCEPTS for Lesson 17A on the next page of this study guide.
- STEP 4 Take the PRACTICE TEST for Lesson 17A.
- STEP 5 Score the PRACTICE TEST for Lesson 17A.

**KEY CONCEPTS**

PAGE NUMBER

APPLICATION SOFTWARE	
DEVELOPMENT TOOLS	12.6
FOURTH GENERATION SOFTWARE	
DEVELOPMENT TOOLS	12.6
ELECTRONIC SPREADSHEET SOFTWARE	12.7
CELL	12.7
NUMERIC DATA	12.7
ALPHANUMERIC DATA	12.7
FILE MANAGEMENT SYSTEM OR	
DATA BASE MANAGEMENT SYSTEMS	12.8

### PRACTICE TEST

1. Application software development tools used by professional programmers and users are commonly referred to as:
  - a) PL/I software development tools.
  - b) Assembly language software development tools.
  - c) Fourth generation software development tools.
  - d) Fifth generation software development tools.
  
2. Name three important issues related to fourth generation development tools:
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_
  - c) \_\_\_\_\_

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS



### OBJECTIVES

- Start up the SuperCalc3 program.
- Define the terms row, column, and cell.
- Locate the current cell status line, spreadsheet status line, and entry line.
- Enter text and numeric data.
- Turn Caps Lock mode and Insert mode on and off.
- Execute GoTo Command.
- Enter formulas using arithmetic operators.
- Save a spreadsheet.

### TO COMPLETE LESSON 17B

- STEP 1      Review KEY CONCEPTS for Lesson 17B on the next page of this study guide.
- STEP 2      Load MS-DOS (refer to Lesson 14B)
- STEP 3      Read and execute the instructions on pages A.1 through A.26 in the textbook. If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 17B.
- STEP 4      After completing the instructions on A.26, exit SuperCalc3 by typing /Q.

GO TO THE NEXT PAGE...

**TO COMPLETE LESSON 17B (continued)**

STEP 5      Review the COMMAND SUMMARY for Lesson 17B.

STEP 6      Take the PRACTICE TEST for Lesson 17B.

STEP 7      Score the PRACTICE TEST for Lesson 17B.

**KEY CONCEPTS**

PAGE NUMBER

COLUMN	A.2
ROW	A.2
CELL	A.2
CURRENT CELL	A.2
SPREADSHEET CURSOR	A.2
STATUS LINES	A.3
SPREADSHEET STATUS LINE	A.3
MENU LINE	A.3
CURRENT CELL STATUS LINE	A.3
CURRENT CELL ADDRESS	A.3
GLOBAL STATUS	A.3
ANSWERKEY OR F1	A.4
ENTRY LINE	A.4
ARROW KEYS	A.4
CAPS LOCK	A.6
COLUMN COUNT	A.7
EDIT CURSOR	A.7
TEXT DATA	A.7
CURSOR DIRECTION INDICATOR	A.10
NUMERIC DATA	A.13
GOTO	A.15
ARITHMETIC OPERATOR	A.17
SLASH COMMANDS	A.20
SAVE SLASH COMMAND	A.20
INTERPRETIVE PROMPTING	A.21
QUIT SLASH COMMAND	A.22
INSERT MODE	A.25

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading SuperCalc3

Be sure you have:

- first loaded MS-DOS before trying to load SuperCalc3.
- properly inserted your SuperCalc3 disk into the A: drive. The label side should face up with the write-protect notch on the left as you insert the disk.
- closed the disk drive door.
- typed **SC3** at the A> prompt.
- If you got the message "insert disk with \command.com in drive A and strike any key when ready" then :
  - remove the SuperCalc3 from drive A.
  - insert diskette containing MS-DOS into drive A and strike any key.

VOL II  
95

For other problems loading SuperCalc3, re-boot the machine with CTRL-ALT-DEL and start again.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Using Arrow Keys

- If pressing the up, down, right, or left arrow keys types numbers instead of moving the cursor, it is likely that the NUM LOCK key has accidentally been pressed. By pressing the NUM LOCK key once again you will be able to turn off the NUM LOCK mode and be able to use the arrow keys to move around the spreadsheet.

#### Using Caps Lock Mode

Be sure you have:

- pressed the CAPS LOCK key (the word CAPS on the menu line indicates that all letters will be typed in upper-case).

VOL II  
96

#### Entering Text Data

If you make typing errors:

- use the arrow keys (left, right, up, or down) to move to the location of your error, and retype the text correctly.

If you wish to delete some or all text in a cell:

- use the arrow keys to move to the desired cell.
- use the left or right arrow keys to move the edit cursor so that it is blinking under the first character to be deleted.
- press the Del key successive times to delete the undesired text.

GO TO THE NEXT PAGE...

## **TROUBLESHOOTING (continued)**

If you wish to add to existing text in a cell:

- use the arrow keys to move to the desired cell.
- use the left or right arrow keys to move the edit cursor to the character in front of which you wish to add text.
- press the Ins key to turn the Insert Mode on.
- type the added text.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Using the GoTo Command

Be sure you:

- pressed the equal sign key (you should have seen the prompt "Enter cell to jump to").
- entered the address of the cell you wish to move to (such as A5).
- pressed the Enter key.

#### Entering Formulas

VOL II  
98

If the formula is displayed in the cell instead of the result of the formula:

- be sure that you have entered the correct cell addresses.
- be sure that you have included the appropriate arithmetic operator(s), such as - for subtraction, + for addition, \* for multiplication, / for division.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Saving a File

Be sure you have:

- pressed a slash (/) and then S (for Save).
- typed in a valid filename such as SALESRPT.

A valid filename can have up to 8 characters with the first character having to be a letter. Only the characters A-Z and 0-9 may be used. Examples of valid filenames are:  
SALESRPT PROJ4A PROJECT2 rpt3

- typed a comma (,) after the filename to be followed by the letter A (for save ALL of the spreadsheet).

Note: if you wish to save your spreadsheet on a floppy diskette on drive B:, then use the filename B:SALESRPT.

VOL II  
99

For other problems saving a file, try pressing the **F2** key and begin the save process again.

#### Exiting from SuperCalc3

Be sure you have:

- pressed a slash (/) and then Q (for Quit).
- press Y to confirm that you do indeed wish to exit SuperCalc3.

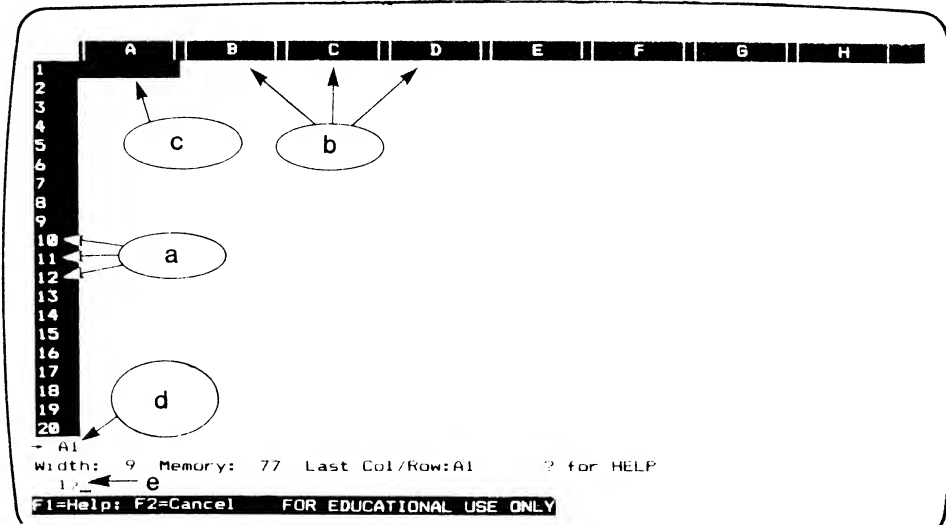


**COMMAND SUMMARY**

COMMAND	EFFECT
CAPS LOCK	Caps mode on/off
Ins	Insert mode on/off
Del	Deletes character on edit cursor
=	GoTo Command
/S	Save file
/Q	Exit SuperCalc3

### PRACTICE TEST

1. Label the following components of a SuperCalc3 spreadsheet:



- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_

2. Which of the following is called the AnswerKey in SuperCalc3?

- a) The question mark key.
- b) The right arrow key.
- c) The F1 function key.
- d) The F2 function key.

GO TO THE NEXT PAGE...

**PRACTICE TEST (continued)**

3. The arithmetic operators used with SuperCalc3 are:
- a) addition (+), subtraction (=), multiplication (x), and division (/).
  - b) addition (+), subtraction (-), multiplication (\*), and division (=).
  - c) addition (+), subtraction (=), multiplication (x), and division (/).
  - d) addition (+), subtraction (-), multiplication (\*), and division (/).

## UNIT QUESTIONNAIRE

## LESSONS 17A - 17B

You have just finished Lessons 17A and 17B.

Before taking this unit questionnaire, read the "Chapter Summary" on page 12.11 in the textbook, points 14 - 21, and review pages A.1 through A.26.

### INSTRUCTIONS

- STEP 1 Take an answer card from the pocket at the back of the notebook.
- STEP 2 Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3 Take your questionnaire.

### QUESTIONS

1. Once an electronic spreadsheet has been built, the user can:
  - a) change values and have existing formulas calculate "what if" simulations.
  - b) change values, but all existing formulas will have to be altered.
  - c) change values, but all existing formulas must stay the same.
  - d) change formulas, but not the existing values.
2. To move the spreadsheet cursor from cell C1 to cell A4, one should press the:
  - a) right arrow key two times and the up arrow key three times.
  - b) left arrow key one time and the up arrow key three times.
  - c) left arrow key two times and the down arrow key three times.
  - d) right arrow key one time and the down arrow key two times.

### QUESTIONS (continued)

3. Which command is used to save a spreadsheet on a disk?
- a) The memory slash command (/M)
  - b) The save slash command (/S)
  - c) The keep slash command (/K)
  - d) The replace slash command (/R)
4. When the Insert mode is on in SuperCalc3:
- a) characters typed on the keyboard are inserted at the edit cursor and existing characters are moved to the right.
  - b) characters typed on the keyboard are inserted at the edit cursor and existing characters are moved to the left.
  - c) characters typed on the keyboard are inserted to the left of the edit cursor and replace any existing characters.
  - d) characters typed on the keyboard are inserted at the edit cursor and replace any existing characters.
5. What filename should be used to store the file SALESRPT on drive B:?
- a) SALESRPT
  - b) B.SALESRPT
  - c) SALESRPT,B
  - d) B:SALESRPT

### QUESTIONS (continued)

6. What is the correct formula for multiplying cell A3 by cell D4?

- a) B3/D4
- b) B3xD4
- c) B3\*D4
- d) B3=D4

7. How do you give the command "GoTo cell D5"?

- a) \*D5
- b) =D5
- c) /D5
- d) +D5

8. When the Del key is pressed:

- a) the character to the left of the edit cursor is deleted.
- b) the character to the right of the edit cursor is deleted.
- c) the character at the edit cursor is deleted.
- d) all characters in a cell are deleted.

## UNIT QUESTIONNAIRE

## LESSONS 17A - 17B

### QUESTIONS (continued)

9. To exit from SuperCalc3, use the:
- a) stop slash command (/S).
  - b) exit slash command (/E).
  - c) finish slash command (/F).
  - d) quit slash command (/Q).
10. In an electronic spreadsheet, the intersection of a row and a column is call a(n):
- a) pixel.
  - b) cell.
  - c) entry line.
  - d) coordinate.

# COMPULIT - Unit 17



## PROJECT

## LESSON 17A-17B

Complete the following assignment:

1. Complete Student Assignment 3, Building a Spreadsheet, on page A.27 in your textbook.

Obtain a printout of your spreadsheet (follow the steps below).

STEP 1      With the printer on-line and loaded with paper, at the entry line press:

/

STEP 2      Type the letter:  
O

STEP 3      Type:  
D

STEP 4      Type:  
ALL,

STEP 5      Type:  
P

If you need additional help view pages A.62 and A.63 in your textbook.

**Submit a printout to NTS along with the Answer Card for Unit 17.**

VOL II  
106A



1

2

3

### OBJECTIVES

- Load a spreadsheet.
- Use the Format command to change column width, right justify text, and change user-defined formats.
- Execute the SUM function.
- Correct errors in slash commands.

### TO COMPLETE LESSON 18A

- STEP 1      Review KEY CONCEPTS for Lesson 18A on the next page of this study guide.
- STEP 2      Load MS-DOS (refer to Lesson 14B)
- STEP 3      Read and execute the instructions on pages A.28 through A.57 in the textbook.
- If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 18A.
- STEP 4      After completing the instructions on A.57, exit SuperCalc3 by typing /Q.
- STEP 5      Review the COMMAND SUMMARY for Lesson 18A.
- STEP 6      Take the PRACTICE TEST for Lesson 18A.
- STEP 7      Score the PRACTICE TEST for Lesson 18A.

**SUPERCALC3: FORMATTING**

**LESSON 18A**

**KEY CONCEPTS**

PAGE NUMBER

LOAD SLASH COMMAND	A.29
FORMAT SLASH COMMAND	A.31
RANGE	A.33
POINTING	A.35
ESCAPE KEY	A.36
POINT MODE	A.36, A.37
REPEATING TEXT	A.40
DISPLAY WINDOW	A.43
SUM FUNCTION	A.46
USER-DEFINED FORMATS	A.49

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading the Spreadsheet

- Type /L and then the name of the spreadsheet you saved in Lesson 17B. Most likely you saved it as SALESRPT.
- After you type the name of the spreadsheet, you should add the option ALL so that all of the spreadsheet will be loaded.

#### Using Format Slash Command

- When you type /F, as with all slash commands, you will see a prompt indicating the options available for use with that slash command. The Format slash command has numerous options available. Be sure to use a comma (,) to separate the options.
- If you wish to make a change in format that will affect all cells in the spreadsheet, use the G(lobal) option.
- If you wish to make a change in format that will affect specific cells in the spreadsheet, use the E(ntry) option.

## SUPERCALC3: FORMATTING

## LESSON 18A

### TROUBLESHOOTING (continued)

#### Indicating A Range of Cells

- A range in SuperCalc3 means one or more cells. Use a colon (:) or a period (.) to indicate a series of adjacent cells. For example A1:A4 and A1.A4 both indicate cells A1 through A4. You could have identified the same range by typing the individual cell names as A1, A2, A3, A4.

#### Point Mode

Be sure you have:

- pressed the Esc key only when the spreadsheet cursor is located at the cell you wish to point to.
- To point to a range of cells:
  - press Esc
  - move the spreadsheet cursor to the first cell in the range
  - type a period (.) or colon (:) to indicate a range
  - move the spreadsheet cursor to the last cell in the range
  - type a comma (,)
  - enter the remaining options for whatever slash command you are using.

#### Correcting or Interrupting Slash Commands

- If you make an error while typing a slash command or need to interrupt any slash command, press the F2 function key.

**COMMAND SUMMARY**

COMMAND	EFFECT
/O Options for /O: Display)	Output slash command  Report contains data as displayed on screen.
C(ontents)	Report contains actual contents of cells
P(rinter)	Report printed on printer
S(etup)	Report printed with special options
C(onsole)	Report displayed on screen.
D(isk)	Report sent to a disk file
/G Option for /G: B(order)	Global slash command  Turns Border feature on/off

### PRACTICE TEST

1. What entries should be typed to load a spreadsheet located in a file named QTRESULT on drive A:
  - a) /LOAD,QTRESULT,P
  - b) /LQTRESULT,A
  - c) /LQTRESULT,A and then press the Enter key
  - d) /LOAD,QTRESULT,ALL and then press the Enter Key
  
2. To expand all columns in a spreadsheet to a width of fifteen characters, which of the following entries should be typed?
  - a) /FGC15 and then press the Enter key
  - b) /GFC15 and then press the Enter key
  - c) /GF15 and then press the Enter key
  - d) /FG15 and then press the Enter key
  
3. To return to the spreadsheet screen from the user-defined format table screen:
  - a) the F1 function key is pressed.
  - b) the F2 function key is pressed.
  - c) the output slash command is used.
  - d) the exit slash command is used.

GO TO THE NEXT PAGE...

**PRACTICE TEST (continued)**

4. When the Backspace key is used to edit a slash command entered on the entry line:
- a) the two previous cell entries are deleted.
  - b) the character to the right of the edit cursor is deleted.
  - c) the previously entered keystroke is deleted from the entry line.
  - d) the first character is deleted from the entry line.

**GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS**



## SUPERCALC3: PRINTING

## LESSON 18B

### OBJECTIVES

- Use the Output slash command.
- Execute necessary commands to print a report without spreadsheet borders.
- Execute necessary commands to print spreadsheet contents.
- Execute necessary commands to print a selection of spreadsheet.

### TO COMPLETE LESSON 18B

VOL II  
114

- STEP 1 Review KEY CONCEPTS for Lesson 18B on the next page of this study guide.
- STEP 2 Load MS-DOS (refer to Lesson 14B)
- STEP 3 Read and execute the instructions on pages A.61 through A.71 in the textbook.
- If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 18A.
- STEP 4 After completing the instructions on A.71, exit SuperCalc3 by typing /Q.
- STEP 5 Review the COMMAND SUMMARY for Lesson 18B.
- STEP 6 Take the PRACTICE TEST for Lesson 18B.
- STEP 7 Score the PRACTICE TEST for Lesson 18B.

**KEY CONCEPTS**

	<u>PAGE NUMBER</u>
OUTPUT SLASH COMMAND	A.62
SPREADSHEET BORDERS	A.64
GLOBAL SLASH COMMAND	A.64
CONTENTS REPORT	A.68

### COMMAND SUMMARY

COMMAND	EFFECT
/F	Format slash command
Options for /F:	
G(lobal)	entire spreadsheet affected
C(olumn)	column or range of columns affected
R(ow)	row or range of rows affected
E(ntry)	specific cells affected
D(efine)	user-defined formats
Esc	points to the current cell address
'	repeating text mode on/off
SUM	Adds values in range of cells specified
F2	Cancels any slash command

### PRACTICE TEST

1. Which command is used to print a spreadsheet?
  - a) The Print slash command
  - b) The Output slash command
  - c) The Save slash command
  - d) The Report slash command
  
2. In order to display the entire spreadsheet on the screen using the Output slash command, one should type:
  - a) P(rinter).
  - b) S(etup).
  - c) C(onsole).
  - d) D(isk).
  
3. If the border has been removed from the spreadsheet, the command to restore the border is:
  - a) /GB.
  - b) /FB.
  - c) /GB and then pressing the Enter key.
  - d) /FB and then pressing the Enter key.

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

## UNIT QUESTIONNAIRE

## LESSONS 18A - 18B

You have just finished Lessons 18A and 18B.

Before taking this unit questionnaire, read the "Chapter Summary" on page A.11 in the textbook, points 14 - 21, and review pages A.1 through A.26.

## INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your questionnaire.

VOL II  
118

## QUESTIONS

1. In order to have the Format slash command affect all cells in every column and row, one should type:
  - a) G(lobal).
  - b) C(olumn).
  - c) E(ntry).
  - d) D(efine).
  
2. The information printed on the content report consists of the information displayed:
  - a) in the cell as it appears on the screen.
  - b) on the cell status line as it appears on the screen.
  - c) on the entry line as it appears on the screen.
  - d) on the global status line as it appears on the screen.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

3. Which command initiates the pointing feature?
- a) The Enter key
  - b) The Del key
  - c) The F1 function key
  - d) The Esc key
4. To turn the repeating text feature off:
- a) type a single apostrophe (') and press the Enter key.
  - b) type a colon (:) and press the Enter key.
  - c) type an equal sign (=) and press the Enter key.
  - d) type a plus sign (+) and press the Enter key.
5. What command is used to remove the spreadsheet border prior to printing the spreadsheet?
- a) The Format slash command
  - b) The Output slash command
  - c) The Global slash command
  - d) The Range slash command

**UNIT QUESTIONNAIRE**

**LESSONS 18A - 18B**

**QUESTIONS (continued)**

6. The entry `A6$=F6F8` on the content report of a spreadsheet indicates that:
- a) cell A6 is formatted using the dollar format and the cell will contain the value generated by subtracting the value in cell F6 from the value in cell F8.
  - b) cell A6 is formatted using the dollar format and the cell will contain the value generated by subtracting the value in cell F8 from the value in cell F6.
  - c) cells F6 and F8 are formatted using the dollar format and both contain the value found in cell A6.
  - d) the value in cell A6 is obtained by subtracting the value in cell F6 from the value in cell F8 and then divided by 100.
7. How do you give the command to right-justify the text data in cells D13 and D14?
- a) `/RJD13.D14` and then press the Enter key.
  - b) `/FGD13.D14,RJ` and then press the Enter key.
  - c) `/FCD13.D14,TR` and then press the Enter key.
  - d) `/FED13.D14,TR` and then press the Enter key.
8. The entry `/ODALL,P` will cause:
- a) the entire spreadsheet to be printed on the printer in the same format as displayed on the screen.
  - b) the entire spreadsheet to be stored on a disk and printed in the same format as displayed on the screen.
  - c) selected cells in the spreadsheet to be printed on the printer in the same format as displayed on the screen.
  - d) selected cells in the spreadsheet to be printed on the console in the same format as when the spreadsheet was last saved.

### QUESTIONS (continued)

9. The command /ODF12:G14,P will cause:
- a) all cells except cells F12 and G14 to be printed on the printer.
  - b) cells F12, F13, F14, G12, G13, and G14 to be printed on the printer in the same format as displayed on the screen.
  - c) cells F12, F13, F14, G12, G13, and G14 to be printed on the printer in a content report.
  - d) cells F12 and G14 to be printed on the printer in the same format as displayed on the screen.
10. The entry SUM(A4.A6,C6,D6.D8) entered in cell F12 will:
- a) add the values in cells A4, A6, C6, D6, and D8 and store the result in cell F12.
  - b) multiply the values in cells A4, A6, C6, D6, and D8 and store the result in cell F12.
  - c) add the values in cells A4, A5, A6, C6, D6, D7, and D8 and store the result in cell F12.
  - d) multiply the values in cells A4, A5, A6, C6, D6, D7, and D8 and store the result in cell F12.



1

2

3

# COMPULIT - Unit 18



## PROJECT

## LESSON 18A-18B

Complete the following two assignments:

1. Complete Student Assignment 7, Formatting a Spreadsheet, on page A.60 in your textbook.

**Submit a printout to NTS along with your Answer Card for Unit 18.**

2. Complete Student Assignment 11, Printing a Spreadsheet, on page A.73 in your textbook.

**Submit the printouts to NTS along with your Answer Card for Unit 18.**

1

2

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Dear Students,

Please note that the textbook contains an error:

Page B.27 should read on line 5:

The DISPLAY ALL TO PRINT command or LIST TO PRINT command may be used to cause the output to be displayed on a printer.

Please correct your textbook now. You will later use these commands to submit your homework.



### OBJECTIVES

- Describe the difference between sequential retrieval and random retrieval.
- Describe sequential files, indexed files, and relative (or direct) files.
- Identify and describe the three types of data bases.
- Identify the five features provided by a data base management system.

### TO COMPLETE LESSON 19A

- STEP 1      Read the major headings in the textbook, pages 10.1 through 10.12.
- STEP 2      Read pages 10.1 through 10.12 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 19A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 19A.
- STEP 5      Score the PRACTICE TEST for Lesson 19A.

## FILE ORGANIZATION AND DATA BASE

## LESSON 19A

### KEY CONCEPTS

#### PAGE NUMBER

PHYSICAL ORGANIZATION	10.1
FIELD	10.1
RECORD	10.1
FILE	10.1
SEQUENTIAL RETRIEVAL	10.1
RANDOM RETRIEVAL	10.1
DATA MANAGEMENT SYSTEM	10.2
(FILE MANAGEMENT SYSTEM)	
SEQUENTIAL FILE ORGANIZATION	10.2
KEY	10.2
INDEXED FILE ORGANIZATION	10.3
INDEX	10.3
LOGICAL INPUT/OUTPUT SYSTEMS	10.5
DIRECT FILE (RELATIVE FILE)	10.5
BUCKETS	10.5
HASHING	10.5
PRIME NUMBER	10.5
COLLISION	10.6
REDUNDANT DATA	10.7
DATA BASE	10.7
HIERARCHY DATA BASE	10.8
NETWORK DATA BASE	10.9

### KEY CONCEPTS (continued)

	<u>PAGE NUMBER</u>
OWNER	10.9
MEMBER	10.9
CONCEPTUAL FILE	10.9
OWNER-COUPLED SET	10.9
DATA BASE SCHEMA	10.10
SUBSCHEMAS	10.10
RELATIONAL DATA BASE	10.10
RELATION	10.10
TABLE	10.10
TUPLE	10.10
SELECTION RELATIONAL OPERATION	10.10
PROJECTION RELATIONAL OPERATION	10.10
NATURAL JOIN RELATIONAL OPERATION	10.11
DATA BASE MANAGEMENT SYSTEM	10.11
INTERNAL ACCESS	10.12
EXTERNAL ACCESS	10.12



### PRACTICE TEST

1. The retrieval of data from auxiliary storage, one record after another, based upon the sequence in which the data is stored, is referred to as:
  - a) random retrieval.
  - b) sequential retrieval.
  - c) physical retrieval.
  - d) ordered retrieval.
  
2. Three major categories of data management systems are:
  - a) sequential, indexed, and direct or relative.
  - b) sequential, relative, and direct.
  - c) relative, direct, and indexed.
  - d) sequential, nonsequential, and random.
  
3. In a hierarchical data base, the relationships are established:
  - a) after the data base is stored on auxiliary storage.
  - b) before the data base is created.
  - c) when the data base is created.
  - d) when an inquiry is made to retrieve information.

### PRACTICE TEST (continued)

4. Which of the following is a feature in a data base management system?
- a) Establishment of the data relationships within a data base
  - b) Facilities to implement a data base and load it with data
  - c) Facilities to maintain and update the database
  - d) All of the above are features in a data base management system.

5. List the three types of data bases in the blanks below.

\_\_\_\_\_ data base

\_\_\_\_\_ data base

\_\_\_\_\_ data base

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

## DBASE: CREATING A DATA BASE

## LESSON 19B

### OBJECTIVES

- Plan your data base by defining the structure, field names, field types, field width, and decimal position for the data base to be created.
- Start up the dBASE III program.
- Give the command to create a new data base.
- Enter field names, field types, field widths, and decimal positions for the data base you will be creating.
- Input data records according to the record structure you previously created.
- Correct errors in your input data.
- View the records in your data base and display the list of all records.
- Quit the dBASE III program.

VOL II  
127

### TO COMPLETE LESSON 19B

STEP 1      Review KEY CONCEPTS for Lesson 19B.

STEP 2      Read and execute the instructions on pages B.1 through B.27 in the textbook.

If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 19B.

GO TO THE NEXT PAGE...

### TO COMPLETE LESSON 19B (continued)

- STEP 3      Exit dBASE III by typing **quit** at the dot prompt, then pressing the Enter key.
- STEP 4      Review the COMMAND SUMMARY for Lesson 19B.
- STEP 5      Take the PRACTICE TEST for Lesson 19B.
- STEP 6      Score the PRACTICE TEST for Lesson 19B.

### KEY CONCEPTS

#### PAGE NUMBER

DATABASE	B.1
RECORD	B.1
FIELDS	B.1
STRUCTURE OF THE DATABASE	B.3
FIELD NAME	B.3
FIELD TYPES	B.4
CHARACTER FIELDS	B.4
DATE FIELDS	B.4
NUMERIC FIELDS	B.4
LOGICAL FIELDS	B.4
MEMO FIELDS	B.4
FILE NAME	B.5
DOT PROMPT	B.6
CLEARING THE SCREEN	B.6
CREATING THE DATABASE	B.7
FILE IDENTIFIER	B.9
CORRECTING ERRORS	B.22
BACKSPACE KEY	B.22
DELETE KEY	B.23
INSERT KEY	B.24
VIEWING PREVIOUS RECORDS	B.25
PGUP KEY	B.25
PGDN KEY	B.25

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading dBASE III

Be sure you have:

- loaded MS-DOS.
- properly inserted your dBASE III disk into the A: drive. The label side should face up with the write-protect notch on the left as you insert the disk.
- closed the disk drive door.
- at the A> prompt, typed **DBASE** and pressed the Enter key.

For other problems loading dBASE III, re-boot the machine with CTRL-ALT-DEL and start again. Make sure you've previously loaded MS-DOS!

VOL II  
130

#### Starting a Data Base

Be sure you have:

- received a dot prompt on the screen after loading dBASE III. If not, re-boot the machine with CTRL-ALT-DEL and start again.
- typed **clear** at the dot prompt, then pressed the Enter key (This whole step is optional).

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

- typed **create** at the dot prompt, then pressed the Enter key.
- typed a valid file name (up to eight characters in length). Be sure that the prefix **B:** precedes your file name. Note that the **B:** is NOT part of your eight-character file name. Press the Enter key after your file name.

For other problems getting your data base started, press the **Esc** key and begin again at the dot prompt.

### Creating the Data Base Structure

VOL II  
131

When entering field information (field names, field types, width, decimal):

- press the Enter key to advance to the next field.
- for field type, you may press a single letter depending on the type (**C, D, N, L, M**). These stand for Character, Date, Numeric, Logical, and Memo.
- press the Enter key twice to signal that you have entered all your fields.

If you make a typing error while entering field information:

- see the troubleshooting passage called "Correcting Input Errors" to follow.

For other problems creating your data base structure try,

- (1) editing what you've done using the instructions in "Correcting Input Errors"
- (2) press the **Esc** key to start over.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Entering Data Records

If you don't see a screen with field names and empty field slots for data entry (as on page B.20):

- you may not have answered **YES** to the question "Input data records now? (Y/N)". Press the **Esc** key, and try creating your file again.

If you try to create your file, and the program says that it ALREADY EXISTS:

- type **N** so you won't overwrite the data base structure you already created.
- type **use** followed by the name of the file at the dot prompt, then press the Enter key.
- type **append** and press the Enter key at the next dot prompt. You should be brought to the point where you can begin entering record data.

If you enter data that is shorter than the allowed length in the field:

- you must press the Enter key to advance to the next field.

GO TO THE NEXT PAGE...



### TROUBLESHOOTING (continued)

If you enter data that is exactly the same length as the allowed length in the field:

- you will hear a "beep". Do not be alarmed, this is not an error. The program will automatically bring the cursor to the next field. The beep is a signal that you've reached the maximum input length for that field.

If you make errors while entering record data:

- see the troubleshooting passage called "Correcting Input Errors" to follow.

### Displaying Records

To view previous records as you enter data:

- press the **PgUp** key.

To view later records in the data base:

- press the **PgDn** key.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

To display all records AFTER the data base has been saved on the disk:

- at the dot prompt type **use** followed by the name of your file and press the Enter key.
- at the next dot prompt type **display all** or type **list.** and press the Enter key.

To EDIT a record AFTER the data base has been saved on the disk:

- at the dot prompt type **use** followed by the name of your file and press the Enter key.
- at the next dot prompt type **edit** followed by the number of the record you wish to change and press the Enter key.

VOL II  
134

### Exiting dBASE III

If you wish to exit the program:

- press the **Esc** key to obtain the dot prompt if you don't already see the dot prompt on the screen.
- type **quit** and press the Enter key to exit dBASE III.

For other problems exiting, pressing the **Esc** key should always help you get to the dot prompt, from where you can type **quit** and press the Enter key.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Correcting Input Errors

If you make typing errors of any kind as you enter field information (structure), OR input data into records:

- press the **Backspace** key to delete a previously typed character. Then, retype your entry correctly.
- press the **Del** key to delete a character under the cursor. Retype the correct character.
- press the **Backspace** key to move back to previous highlighted areas on the same line to correct an error.
- press the Enter key to move forward to the next highlighted area on the same line to correct an error or enter field information.
- use the Up Arrow key and the Down Arrow key to move to other lines to correct field information.
- use the Left Arrow key and Right Arrow key to move left and right within a field with information previously entered to position the cursor at an error.
- press the **Ins** key to turn Insert mode ON so that you can insert text into the current text. To return to the mode where you can type over errors, press the **Ins** key again. If you are unsure whether Insert mode is on or off, look at the top right of your screen for the word "INSERT".

### COMMAND SUMMARY

DOT PROMPT COMMANDS	
COMMAND	EFFECT
clear	Clear messages
create	Create a new data base
append	Add more records to data base
edit nn	Edit record number nn
display all	List all records in data base
list	List all records in data base
display all to printer	Print list of all records in data base
list to printer	Print list of all records in data base
quit	Exit dBASE III and save work
help xxx	Obtain help on command xxx

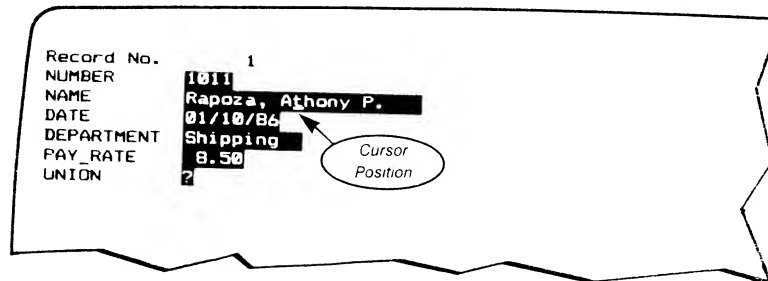
GO TO THE NEXT PAGE...

### COMMAND SUMMARY

MOVEMENT/EDITING COMMANDS	
COMMAND	EFFECT
Enter key	Enter information in a field or move forward to next field or high-light
Backspace key	Delete previous character or move back to previous highlight on line
Insert key	Insert mode on/off
Delete key	Delete character at cursor
Up Arrow key	Move cursor up one line
Down Arrow key	Move cursor down one line
Left Arrow key	to the left
Right Arrow key	Move cursor one position to the right
PgUp key	Move to previous record
PgDn key	Move to next record

### PRACTICE TEST

1. A record in dBASE III is composed of:
  - a) a series of databases.
  - b) a series of files.
  - c) a series of records.
  - d) a series of fields.
  
2. A dBASE III dot prompt is:
  - a) a period in the leftmost column of the screen.
  - b) a blinking underscore character.
  - c) entered by the user to indicate that a command will follow.
  - d) an indicator for the location of an error.
  
3. Using the pictures, below what key allowed the user to type a **n** between the A and t in the name Anthony.



The screenshot shows a dBASE III record display with the following fields and values:

Field	Value
Record No.	1
NUMBER	1011
NAME	Rapoza, Anthony P.
DATE	01/10/86
DEPARTMENT	Shipping
PAY_RATE	8.50
UNION	2

A cursor position is indicated by a small arrow pointing to the end of the name field, after the 'y' in 'Anthony'.

- a) Enter key.
- b) INS key
- c) Num Lock key.
- d) Right arrow key.

GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

4. Which item below is NOT a dBASE III field type?
  - a) Char/text
  - b) Date
  - c) Logical
  - d) Notes
  
5. If record number 12 is displayed on the screen, and the user wishes to display record number 11, the user should press:
  - a) the **PgUp** key.
  - b) the **PgDn** key.
  - c) the **F1** key.
  - d) none of the above.

## UNIT QUESTIONNAIRE

## LESSONS 19A - 19B

You have just finished Lessons 19A and 19B.

Before taking this unit questionnaire, read the "Chapter Summary" on page 10.13 in the textbook, and review pages B.1 through B.27.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

VOL II  
140

### QUESTIONS

1. With sequential file updating:
  - a) the transaction file may be in random sequence, but the file to be updated must be in a sequence by some key.
  - b) the transaction file must be in sequence, but the file to be updated can be in any sequence.
  - c) both the transaction file and the file to be updated must be in the same sequence.
  - d) all additions to the file must be stored in one transaction file, and all deletions must be stored in a separate transaction file.

GO TO THE NEXT PAGE...



## UNIT QUESTIONNAIRE

## LESSONS 19A - 19B

### QUESTIONS (continued)

2. The major types of data base organizations in use today include:
  - a) sequential and random.
  - b) sequential, relative, and indexed.
  - c) hierarchical and network.
  - d) hierarchical, network, and relational.
  
3. A data base management system is:
  - a) a series of programs written by computer manufacturers or software vendors which provides for the implementation and maintenance of a data base.
  - b) a program written to create an indexed file.
  - c) a program written to create a direct file.
  - d) a series of programs written by computer manufacturers or software vendors which will automatically create new data bases for the user.
  
4. In a relational data base:
  - a) parent-child relationships must be established when the data base is created.
  - b) parent-child relationships can be established anytime the user desires to define them.
  - c) relationships among data can be determined at the time the user requests information from the data base.
  - d) relationships are not established until the user formats the report.

### QUESTIONS (continued)

5. Of the three types of data bases, the one that is the most user-oriented is the:
- a) hierarchy data base.
  - b) network data base.
  - c) relational data base.
  - d) all are about equal.
6. A database is:
- a) an unorganized collection of data which, after it is organized, is accessible so that reports can be made.
  - b) a collection of data organized in a manner which allows access, retrieval, and use of that data.
  - c) not available for use on personal computers because of limited main computer memory.
  - d) organized into rows and columns which can be referenced.
7. Which dBASE III command allows you to view the records in a database?
- a) Create
  - b) Clear
  - c) Display all
  - d) List structure

## UNIT QUESTIONNAIRE

## LESSONS 19A - 19B

### QUESTIONS (continued)

8. A character field:
- a) can contain any printable character that can be entered from the keyboard.
  - b) must contain numeric data only.
  - c) can contain the letters Y, N, or T, F only.
  - d) requires the user to enter the width of the field and also the number of positions to the right of the decimal point.
9. To create a dBASE III database, it is necessary to define the:
- a) size of the database.
  - b) structure of the database.
  - c) use of the database.
  - d) number of characters in the database.
10. Which one of the following is NOT generally used when we wish to edit data in a dBASE III record?
- a) Insert key
  - b) Delete key
  - c) Backspace key
  - d) Escape key

# ***COMPULIT - Unit 19***



## **PROJECT**

## **LESSON 19A-19B**

Complete the following assignment:

- 1 Complete Student Assignment 3, Creating and Displaying a Database, on page B.29 in your textbook.

**Submit a printout to NTS along with your Answer Card for Unit 19.**

**VOL II  
143A**

1

2

3

### OBJECTIVES

- Access a data base file that has been previously saved to disk.
- Display the structure of a data base.
- Display records with all fields or selected fields.
- Display selected records within the data base.
- Search the data base for particular information using relational operators to set conditions.
- Use logical operators to conduct data base searches.
- Use the count, sum, and average commands.

STEP 1      Review KEY CONCEPTS for Lesson 20A.

STEP 2      Load MS-DOS (refer to Lesson 14B).

STEP 3      Read and execute the instructions on pages B.30 through B.47 in the textbook.

If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 20A.

GO TO THE NEXT PAGE...

## DBASE: DISPLAYING RECORDS

## LESSON 20A

### TO COMPLETE LESSON 20A (continued)

- STEP 4      After completing page B.47, exit dBASE III by typing **quit** and pressing the Enter key.
- STEP 5      Review the COMMAND SUMMARY for Lesson 20A.
- STEP 6      Take the PRACTICE TEST for Lesson 20A.
- STEP 7      Score the PRACTICE TEST for Lesson 20A.

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
DIRECTORY	B.30
DISPLAYING SELECTED FIELDS	B.33
RELATIONAL OPERATORS	B.37
SEARCHING FOR A NAME	B.39
DISPLAYING LOGICAL FIELDS	B.42
LOGICAL OPERATORS	B.42



### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading dBASE III

Be sure you have:

- properly inserted your dBASE III disk into the A: drive. The label side should face up with the write-protect notch on the left as you insert the disk.
- closed the disk drive door.
- at the A> prompt, typed **DBASE** and pressed the Enter key.

VOL II  
147

For other problems loading dBASE III, re-boot the machine with CTRL-ALT-DEL and start again. Make sure you've previously loaded MS-DOS!

#### Accessing a Data Base File

Be sure that:

- you have loaded dBASE III properly.
- you have typed **use** followed by the file name (prefixed with B:) at the dot prompt, and have pressed the Enter key.

For other problems accessing your data base file, press the **Esc** key and try typing the **use** command again, followed by pressing the Enter key.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Displaying Records

To display all records, all fields:

- type **display all** or **list** at the dot prompt and press the Enter key.

To display selected fields:

- type **display all** followed by the exact names of the fields you'd like to view, then press the Enter key. Make sure you do not misspell any of the field names.

For other problems displaying selected records or fields, make sure you use the command appropriate to your choice: display all, list, display record, display next, go, goto.

VOL II  
148

#### Searching the Data Base

If you wish to find records that share a value in one or more fields:

- use the **display for** command, a relational operator, and the value to search for.

To search for specific text:

- use the **display for** command and place the text to search for within double quotation marks (") exactly as it appears in the data base.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

If dBASE III does not find the records you've requested:

- you may see an empty list as the result of the search. Perhaps you've entered the text between the double quotation marks incorrectly. Check it, then re-issue the display for command at the dot prompt.

For other problems searching the data base, try re-entering your command at the dot prompt and pressing the Enter key. If you don't see a dot prompt, press the **Esc** key.

### COMMAND SUMMARY

DOT PROMPT COMMANDS	
COMMAND	EFFECT
dir B:	Show directory of data base files on disk in drive B:
use	Use a data base file
display structure	Display data base structure
display off	Display records without record numbers
display record nn	Display record number nn
display next nn	Display next nn records beginning with active record
go, goto nn	Position record pointer at record nn
go, goto top/bottom	Position record pointer at top or bottom of data base
display for [conds]	Search data base for and display records that fit [conds]
count	Count number of records in data base
sum [num. field]	Give total sum for [num. field]
average [num. field]	Give the arithmetic average for [num. field]

GO TO THE NEXT PAGE...

### COMMAND SUMMARY (continued)

RELATIONAL OPERATORS	
SYMBOL	MEANING
=	Equal to
<	Less than
>	Greater than
<=	Less than or Equal to
>=	Greater than or Equal to
<>	Not Equal to

VOL II  
151

LOGICAL OPERATORS
.NOT. .AND. .OR.

### PRACTICE TEST

1. To review the structure of a data base:
  - a) type **review structure**, and press the Enter key.
  - b) type **review**, and press the Enter key.
  - c) type **display structure**, and press the Enter key.
  - d) type **display**, and press the Enter key.
  
2. The dBASE III command DISPLAY RECORD 7:
  - a) will display the first seven records in the active file.
  - b) will display the seventh record in the active file.
  - c) will display seven records, beginning with the active record.
  - d) is an invalid command and will result in an error message.
  
3. The relational operator  $\leq$  means:
  - a) equal to.
  - b) not equal to.
  - c) greater than or equal to.
  - d) less than or equal to.

GO TO THE NEXT PAGE...

## DBASE: DISPLAYING RECORDS

## LESSON 20A

### PRACTICE TEST (continued)

4. Assume the DESCRIPTION field in a record contains the following values:

Record 1: Pencils  
Record 2: pencil  
Record 3: Pen  
Record 4: pen

When the command DISPLAY FOR DESCRIPTION ="Pen" is executed, which record(s) will be displayed?

- a) Record 3 and Record 4
- b) Record 3 only
- c) Record 1 and Record 3
- d) Record 4 only

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

### OBJECTIVES

- Describe what "sorting" accomplishes and the three steps involved for dBASE III sorting.
- Set the default disk drive to B:.
- Sort all records in a data base file by one or more key fields in ascending or descending sequence.
- Display the records in a newly-sorted file.
- Sort selected records in a data base file by one or more key fields in ascending or descending sequence.

### TO COMPLETE LESSON 20B

STEP 1      Review KEY CONCEPTS for Lesson 20B.

STEP 2      Load MS-DOS (refer to Lesson 14B).

STEP 3      Read and execute the instructions on pages B.52 through the top of B.62 in the textbook.

If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 20B.

GO TO THE NEXT PAGE...



### TO COMPLETE LESSON 20B (continued)

- STEP 4      After completing page B.62, exit dBASE III by typing **quit** and pressing the Enter key.
- STEP 5      Review the COMMAND SUMMARY for Lesson 20B.
- STEP 6      Take the PRACTICE TEST for Lesson 20B.
- STEP 7      Score the PRACTICE TEST for Lesson 20B.

### KEY CONCEPTS

	<u>PAGE NUMBER</u>
KEY FIELD	B.53
ASCENDING ORDER	B.53
DESCENDING ORDER	B.53, B.59
SORTING	B.55
DISPLAYING THE SORTED FILE	B.58
SORTING RECORDS IN DESCENDING SEQUENCE	B.59
SORTING SEQUENCE	B.60
AMERICAN STANDARD CODE FOR INFORMATION INTERCHANGE (ASCII)	B.60
SORTING SELECTED RECORDS FROM A FILE	B.61
SORTING ON MORE THAN ONE FIELD	B.62

## DBASE: SORTING RECORDS

## LESSON 20B

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading dBASE III

Refer to "TROUBLESHOOTING", Lesson 20A.

#### Accessing a Data Base File

Be sure that:

- you have loaded dBASE III properly.
- you have typed **use** followed by the file name (prefixed with B:) at the dot prompt, and have pressed the Enter key.

For other problems accessing your data base file, press the **Esc** key and try typing the **use** command again, followed by pressing the Enter key.

#### Setting the Default Disk Drive

If you type **use** followed by your file name and the Enter key and dBASE III does not find your file, be sure:

- you have previously entered **set default to B:** at the dot prompt, and have pressed the Enter key.
- you have typed the name of your file correctly.
- you have inserted your data disk into drive B: that contains the file you wish to use.

For other problems setting the default drive, simply retype the **set default to B:** command at the dot prompt and press the Enter key, or press the **Esc** key if you don't see a dot prompt.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Sorting Records

To sort records in a data base, you need to issue the **sort** command, and a minimum of:

ON followed by the field(s) to sort on. Multiple fields should be given with the most important field first, separated by commas.

TO followed by the name of the file under which the sorted records will be saved.

Additionally you may include:

FOR followed by a condition under which the sort is to occur (refer to page B.61 in the textbook).

DESCENDING if you wish the sort to be carried out in descending sequence (refer to page B.59 in the textbook).

If you have trouble sorting records properly, or if you make an error giving the command to sort, it is likely that dBASE III will return a message to you instead of attempting to sort records. Try giving the sort command again at the dot prompt, and remember to press the Enter key.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Displaying the Sorted File

Don't forget to:

- access the file which contains the sorted records by typing **use** followed by the file name you provided in the sort command, followed by the Enter key.
- type **display all** or **list** at the dot prompt after the step above and press the Enter key, in order to view the sorted records.

### COMMAND SUMMARY

DOT PROMPT COMMANDS	
COMMAND	EFFECT
set default to B: sort	Set the default disk drive to B: Sort records in a data base file
on [fields] to [file]	Field name(s) on which to sort records File name under which sorted records will be saved
[Optional]:	
for [cond] descending	Condition under which sort is to occur Sort records in descending sequence

### PRACTICE TEST

1. A field used as a basis of a sorting operation is called a:
  - a) sort field.
  - b) sequence field.
  - c) key field.
  - d) basis field.
  
2. The SET DEFAULT TO command is used to:
  - a) set the default sorting sequence for a file to "descending".
  - b) set the default disk drive on which files will be stored.
  - c) set the default active file whenever dBASE III is started.
  - d) none of the above.
  
3. The dBASE III command SORT TO NAMEFILE ON NAME will:
  - a) sort the data in the file called NAMEFILE and store it in the file called NAME.
  - b) sort the data in the file called NAME and store it in the file called NAMEFILE.
  - c) sort the data in the active file in ascending sequence based on values in the NAME field and store sorted data in a file called NAMEFILE.
  - d) sort the data in the active file in descending sequence based on values in the NAME field and store sorted data in a file called NAMEFILE.

### PRACTICE TEST (continued)

4. Assume the following values are contained in the AGE field in the active file:

Record 1: 23  
Record 2: 42  
Record 3: 41  
Record 4: 29

After the dBASE III command SORT ON AGE TO AGEFILE is executed, in which sequence will the records in the file called AGEFILE be stored?

- a) Record 1, Record 2, Record 3, Record 4
- b) Record 4, Record 3, Record 2, Record 1
- c) Record 2, Record 3, Record 4, Record 1
- d) Record 1, Record 4, Record 3, Record 2

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS



## DBASE: MODIFYING A DATA BASE

## LESSON 20C

### OBJECTIVES

- Name the three basic functions performed to keep records in a data base up-to-date.
- Add records to a data base file.
- Delete records from a data base file.
- Undo the deletion of records in a data base file.
- Change information in records of a data base file.

### TO COMPLETE LESSON 20C

VOL II  
163

- STEP 1      Review KEY CONCEPTS for Lesson 20C on the next page of this study guide.
- STEP 2      Load MS-DOS (refer to Lesson 14B).
- STEP 3      Read and execute the instructions on pages B.90 through B.100 in the textbook.
- If you have difficulty executing instructions, refer to the section called TROUBLESHOOTING for Lesson 20C.
- STEP 5      Review the COMMAND SUMMARY for Lesson 20C.
- STEP 6      Take the PRACTICE TEST for Lesson 20C.
- STEP 7      Score the PRACTICE TEST for Lesson 20C.

### KEY CONCEPTS

#### PAGE NUMBER

ADDING RECORDS TO A FILE	B.90
DELETING RECORDS FROM A FILE	B.94
CHANGING RECORDS IN A FILE	B.96

## DBASE: MODIFYING A DATA BASE

## LESSON 20C

### TROUBLESHOOTING

Use this section only if you encounter problems carrying out the instructions in the textbook.

#### Loading dBASE III

Refer to "TROUBLESHOOTING", Lesson 20A.

#### Accessing a Data Base File

Be sure that:

- you have loaded dBASE III properly.
- you have typed **use** followed by the file name (prefixed with B:) at the dot prompt, and have pressed the Enter key.

VOL II  
165

For other problems accessing your data base file, press the **Esc** key and try typing the **use** command again, followed by pressing the Enter key.

#### Adding Records to a File

If you wish to add new records to the end of the list of records in your file:

- use the **append** command at the dot prompt. Enter record information when the empty record appears on the screen.

If you wish to add a new record somewhere within the list of records already in the file:

- use the **goto** command followed by the number of a record.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

- to insert the new record after this currently active record, use the **insert** command at the dot prompt.
- to insert the new record before this currently active record, use the **insert before** command at the dot prompt.
- enter your record information when the empty record appears on the screen.

If you add a new record in the wrong place in the file accidentally:

- follow the instructions for "Deleting Records from a File" in the next section of TROUBLESHOOTING and delete your previously entered record.

For other problems adding records to a file, you may:

- (1) issue the appropriate command again (**append**, **insert**, or **insert before**)
- (2) press the **Esc** key to get the dot prompt if you don't see it
- (3) quit dBASE III and start again.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

#### Deleting Records from a File

To mark a record in a file for deletion:

- use the **delete record** command with the number of the record to mark for deletion.
- you may instead use the **delete for** command with the condition under which one or more records should be marked for deletion. This condition can specify information from one particular record, or it can refer to information common to many records you may wish to mark for deletion.

If you decide that you do NOT want to delete a record (or records) previously marked for deletion with the delete command:

- use the **recall record** command with the number of the record to be saved from deletion in your file.
- you may instead use the **recall for** command with the condition under which one or more records should be retained and saved from deletion. This condition can specify information from one particular record, or it can refer to information common to many records you may wish to save from deletion.

GO TO THE NEXT PAGE...

### TROUBLESHOOTING (continued)

To permanently delete your record(s):

- use the **pack** command at the dot prompt. Any records you marked for deletion with the delete command are now removed from the file.

For other problems deleting or recalling records: (1) if you're certain you want to carry out all marked deletions, type **pack** at the dot prompt, and press the Enter key. (2) otherwise, do NOT type pack! Use the recall command, or continue working in the file, and when you quit dBASE III your records will not be deleted.

### Changing Records in a File

To change information in a record:

- use the **edit record** command with the appropriate record number, or use the **change for** command with the condition which will find the record(s) to be edited.
- alternatively, use the **browse** command to display up to 17 records on the screen beginning with the currently active record. This allows editing of information in multiple records.
- use the **goto** command with a record number (or TOP) before using the **browse** command to select the set of records that will be displayed.

### TROUBLESHOOTING (continued)

To make editing changes:

- press the **Backspace** key to delete a previously typed character. Then, retype your entry.
- press the **Del** key to delete a character under the cursor. Retype the correct character.
- press the **Home** key to move back to previous highlighted areas on the same line when using the browse command to edit a record.
- press the **End** key to move forward to the next highlighted area on the same line when using the browse command to edit a record.
- use the Up Arrow key and the Down Arrow key to move to other lines to change field information.
- use the Left Arrow key and Right Arrow key to move left and right within a field with information previously entered to position the cursor for an editing change.
- press the **Ins** key to turn Insert mode ON so that you can insert text into the current text. To return to the mode where you can type over text, press the **Ins** key again. If you are unsure whether Insert mode is on or off, look at the top right of your screen for the word "INSERT".

When you have successfully edited your record(s):

- hold down the **Ctrl** key and press the **End** key to record your edits. You will then see a dot prompt on the screen.

### COMMAND SUMMARY

DOT PROMPT COMMANDS	
COMMAND	EFFECT
append	Add records to end of data base file
insert	Insert record after currently active record
insert before	Insert record before currently active record
delete	Mark currently active record for deletion
delete record nn	Mark record number nn for deletion
delete for [cond]	Mark record(s) for deletion based on condition in [cond]
set deleted on/off	Make records marked for deletion invisible or visible
recall record nn	Save record number nn from deletion
recall for [cond]	Save record(s) from deletion based on condition in [cond]
recall all	Save all records from deletion

GO TO THE NEXT PAGE...



### COMMAND SUMMARY (continued)

DOT PROMPT COMMANDS (CONTINUED)	
COMMAND	EFFECT
pack	Delete all records marked for deletion from file and update record numbers
edit record nn	Call up record number nn for editing
change for [cond]	Call up record specified by condition [cond] for editing
browse	Display up to 17 records on screen for editing beginning with currently active record

VOL II  
171

OTHER OPTIONS	
OPTION	EFFECT
Home key	Move cursor one field to the left when using browse command
End key	Move cursor one field to the right when using browse command
Ctrl-End	Save changes of records to disk
Ctrl-U	Mark record(s) for deletion when using browse command

### PRACTICE TEST

1. Place a check mark beside the dot prompt commands used to add records to a file:

☐ insert  
☐ add  
☐ insert before  
☐ append  
☐ edit

2. Which of the following functions is not performed to keep records in a database file up-to-date?
- a) Delete records from the file
  - b) Move records from one location on the disk to another location
  - c) Add records to the file
  - d) Change records in the file

### PRACTICE TEST (continued)

3. If the STUDENTS file contains 25 records, and the following commands are executed:

```
.USE STUDENTS  
.GOTO 12  
.INSERT
```

Then, when the data for the record is entered, the new record will be:

- a) record number 11.
  - b) record number 12.
  - c) record number 13.
  - d) record number 26.
4. Which of the following commands will make all records marked for deletion in the active file no longer marked for deletion?
- a) Unmark all
  - b) Undelete records
  - c) Reactivate all
  - d) Recall all
5. To permanently remove all records marked for deletion from the active file:
- a) type **remove**, and press the Enter key.
  - b) type **pack** and press the Enter key.
  - a) type **append**, and press the Enter key.
  - a) type **delete**, and press the Enter key.

## UNIT QUESTIONNAIRE

## LESSONS 20A - 20C

You have just finished Lessons 20A, 20B, and 20C.

Before taking this unit questionnaire, review pages B.30 through B.62, and B.90 through B.100 in the textbook.

## INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

VOL II  
174

## QUESTIONS

1. When the LIST command is used:
  - a) all records in a file are displayed and the screen display is not stopped to allow the user to view the records.
  - b) a screenful of data is displayed and then the display is halted while the user examines the screen.
  - c) both a and b, depending on the number of characters in each record of the file being listed.
  - d) only the first twenty records of a file can be listed.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. If record number 9 is the active record, and the command DISPLAY NEXT 3 is executed:

- a) record number 3 will be displayed.
- b) records numbered 9, 10, and 11 will be displayed.
- c) records numbered 10, 11, and 12 will be displayed.
- d) records numbered 1, 2, and 3 will be displayed.

3. Assume the NAME field contains the following values:

Record 1: Andersan  
Record 2: Andersen  
Record 3: Anderson  
Record 4: Andersun

VOL II  
175

When the command DISPLAY FOR NAME = "Andersen"  
.OR. NAME > "Anderson" is executed, which records will be displayed?

- a) Record 2 only
- b) Record 3 only
- c) Record 2, Record 3, and Record 4
- d) Record 2 and Record 4

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

4. Assume the STORE\_NAME field contains the following values:

Record 1: Dominic's  
Record 2: Downtown Department Store  
Record 3: Dean's Pharmacy  
Record 4: Nancy's Hairdressers

When the command DISPLAY FOR STORE\_NAME <> "D" is executed, which record(s) will be displayed?

- a) Record 4 only
  - b) Record 1 and Record 2
  - c) Record 1, Record 2, and Record 3
  - d) None of the records will be displayed.
5. When the SORT command is executed, the file containing the data to be sorted:
- a) must be specified in the SORT command.
  - b) must be the active file.
  - c) must both be the active file and be specified in the SORT command.
  - d) must be the default active file.

### QUESTIONS (continued)

6. Assume the following sequence of instructions is executed:

.USE STUDENTS  
.SORT TO MINORS ON AGE DESCENDING FOR AGE < 18

Assume further that the following values are contained in the AGE field for the STUDENTS file:

Record 1:	17
Record 2:	23
Record 3:	18
Record 4:	16
Record 5:	15
Record 6:	20

After the sorting operation is completed, in which sequence will the records in the MINORS file be sorted?

- a) Record 2, Record 6, Record 3, Record 1, Record 4, and Record 5
- b) Record 2, Record 6, and Record 3
- c) Record 1, Record 4, and Record 5
- d) Record 5, Record 4, and Record 1

7. When sorting using the dBASE III SORT command:

- a) character fields, logical fields, and numeric fields can be sorted.
- b) character fields, numeric fields, and memo fields can be sorted.
- c) numeric fields, logical fields, and date fields can be sorted.
- d) character fields, numeric fields, and date fields can be sorted.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

8. To make the fields in record number 9 of the active file available to be changed:
- a) type **change** and press the Enter key.
  - b) type **edit record 9** and press the Enter key.
  - c) type **alter record 9** and press the Enter key.
  - d) type **display 9** and press the Enter key.
9. To mark a highlighted record for deletion when using the BROWSE command:
- a) press the **Del** key.
  - b) press the **End** key.
  - c) press the **End** key while holding down the **Ctrl** key.
  - d) press the **U** key while holding down the **Ctrl** key.
10. If the STUDENTS file is the active file, to mark all records in the STUDENTS file for deletion which have the value 062364 in the numeric BIRTH\_DATE field, which of the following commands should be used?
- a) **delete for birth\_date = 062364**
  - b) **delete for birth\_date = "062364"**
  - c) **delete students for birth\_date = 062364**
  - d) **delete students for birth\_date = "062364"**





## PROJECT

## LESSON 20A-20C

Complete Student Assignment 21 through Assignment 23.  
Write your answers to these assignments below. Be sure to  
execute these assignments in the order they are presented.

### Assignment 21

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_

Submit a printout to NTS for this assignment along with your  
Answer Card for Unit 20.

### Assignment 22

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_

VOL II  
178A

### Assignment 23

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_

Submit a printout to NTS for this assignment along with your  
Answer Card for Unit 20.

—

—

—

- Distinguish between different types of programming languages.
- Describe the advantages and disadvantages of different programming languages.
- Distinguish between a well-coded program and a poorly-coded program.

### STEP 1

Read the major headings in the textbook, pages 13.1 through 13.12.

### STEP 2

Read pages 13.1 through 13.12 in the textbook.

### STEP 3

Review KEY CONCEPTS for Lesson 21A on the next page of this study guide.

### STEP 4

Take the PRACTICE TEST for Lesson 21A.

### STEP 5

Score the PRACTICE TEST for Lesson 21A.

## PROGRAMMING LANGUAGES

## LESSON 21A

### KEY CONCEPTS

#### PAGE NUMBER

COMPUTER PROGRAM	13.1
MACHINE LANGUAGE	13.1
SOURCE LANGUAGE	13.1
ASSEMBLER LANGUAGE	13.2
LOW-LEVEL LANGUAGE	13.2
LABEL	13.2
OPERATION CODE	13.2
OPERANDS	13.2
HIGH-LEVEL LANGUAGE	13.3
FORTRAN	13.3
AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)	13.4
PL/I	13.6
RPG	13.7
BASIC	13.8
NIKLAUS WIRTH	13.9
PASCAL	13.9
MODULA-2	13.9
ADA	13.10
C	13.10
LOGO	13.11
SEYMOUR PAPERT	13.11

### PRACTICE TEST

1. To execute a program, the actual instructions which are executed:
  - a) must be in the form of a high-level language.
  - b) can either be in the form of a high-level language or a low-level language.
  - c) must be in the form of machine language.
  - d) must be entered as ASCII bits.
  
2. BASIC, which stands for Beginner's All-Purpose Symbolic Instruction Code:
  - a) was developed for microcomputers in 1977.
  - b) was developed for data communications applications in the late 1960's and then was modified for use with microcomputers in the mid-1970's.
  - c) was developed in 1965 for use in an academic environment.
  - d) was the first programming language developed after structured programming was introduced and contains all of the structures needed to easily implement structured programming.
  
- 3) Assembler language statements consist of three parts. They are:
  - a) a label, an object code, and an operand.
  - b) a label, an operation code, and one or more operands.
  - c) a label, a macro, and an object code.
  - d) a label, operation code, and an object code.

GO TO THE NEXT PAGE...

## PROGRAMMING LANGUAGES

## LESSON 21A

### PRACTICE TEST (continued)

4. FORTRAN was primarily developed for use in:
  - a) business applications.
  - b) telecommunications applications.
  - c) distributed processing applications.
  - d) mathematical and scientific applications.
  
5. Ada is a new programming language based on which two major programming languages?
  - a) COBOL and FORTRAN
  - b) PL/I and Pascal
  - c) Pascal and BASIC
  - d) PL/I and BASIC
  
6. The machine language instructions which are generated from the source statements in an assembler language program are called:
  - a) object code.
  - b) program code.
  - c) assembler code.
  - d) source code.

## INTRODUCTION TO BASIC

## LESSON 21B

Today there are numerous versions of BASIC available. You will be using GW-BASIC. Over the next few units, several lessons will present instructions on GW-BASIC. These instructions cover only a part of the BASIC language. See your documentation, Microsoft, GW-BASIC for additional information.

### OBJECTIVES

- Create a BASIC program.
- Execute a BASIC program.
- Load and edit a BASIC program.

### TO COMPLETE LESSON 21A

VOL II  
183

- |               |  |
|---------------|--|
| <u>STEP 1</u> | Read and execute INSTRUCTIONS: LOADING & QUITTING GW-BASIC on the next page of this study guide. |
| <u>STEP 2</u> | Read and execute INSTRUCTIONS: CREATING A PROGRAM in this lesson.                                |
| <u>STEP 3</u> | Read and execute INSTRUCTIONS: EXECUTING A PROGRAM in this lesson.                               |
| <u>STEP 4</u> | Read and execute INSTRUCTIONS: EDITING A PROGRAM in this lesson.                                 |
| <u>STEP 5</u> | Review COMMAND SUMMARY in this lesson.   |
| <u>STEP 6</u> | Take the PRACTICE TEST for Lesson 21B.   |
| <u>STEP 7</u> | Score the PRACTICE TEST for Lesson 21B.  |

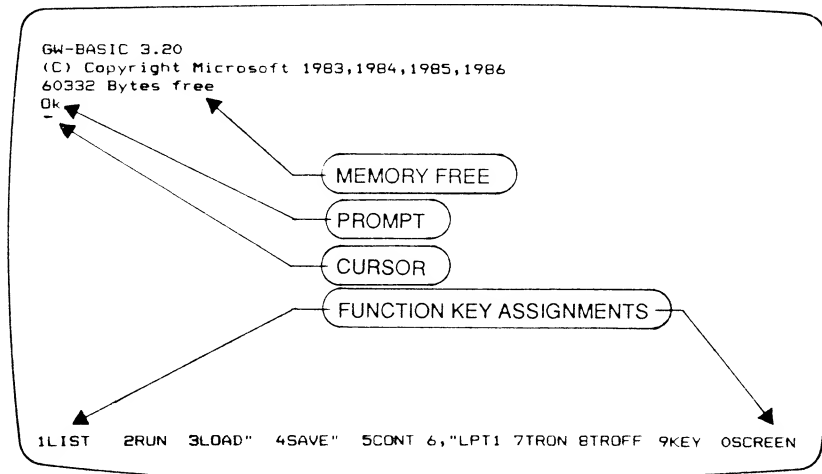


### INSTRUCTIONS: LOADING & QUITTING GW-BASIC

#### Procedure: How to Load GW-BASIC

- STEP 1 Load MS-DOS (see Lesson 14B).
- STEP 2 At the A> prompt, remove the MS-DOS floppy disk and insert the GW-BASIC disk into your A drive. Make sure you insert it with the label facing up. Close the drive door.
- STEP 3 At the A> prompt, type **gwbasic** and press the Enter key.

The following screen will appear.



- STEP 4 Using the picture above, locate the:
- prompt
  - cursor
  - bytes available in memory while using GW-BASIC
  - function key assignments

GO TO THE NEXT PAGE...

### INSTRUCTIONS: LOADING & QUITTING GW-BASIC (continued)

#### Procedure: How to Quit GW-BASIC

STEP 5 Whenever you have a new line (cursor in the left-most column either below the OK prompt or after pressing the Enter key), you may quit GW-BASIC.

To quit, type **system** and press the Enter key.

The A> prompt will return.

STEP 6 Remove the GW-BASIC disk from the A drive and place it back in its protective cover.

#### Troubleshooting: Loading GW-BASIC

If you receive the message "Bad command or File Name", check your spelling and typing, and check to see you inserted GW-BASIC in the A drive.

VOL II  
185

#### Troubleshooting: Quitting GW-BASIC

If you receive the message "Syntax error", check your typing of the the word system. Press the Enter key to get a new line, type **system**, and press the Enter key.



### INSTRUCTIONS

#### Introduction to writing a program

In GW-BASIC there are two modes of operation. We will use the Indirect Mode so that we may save programs for later use. (See your documentation for information on Direct Mode.)

A BASIC program is made up of statements. These statements are executed one at a time sequentially, unless a statement is used to alter the sequence. Each statement is made up of a line number and a BASIC statement. The line numbers are used to tell BASIC the order to execute the statements.

A BASIC statement can be up to 255 characters long. For statements longer than 80 characters just keep typing and GW-BASIC will wordwrap the statement until you reach the maximum character length. Press the Enter key to signify the end of the statement.

VOL II  
186

When the Enter key (or Return key) is pressed, it signifies the end of one statement and the beginning of a NEW LINE or new statement.

#### About line numbers

Line numbers always begin a statement. Therefore they will always be in the left-most column on the screen.

Line numbers are whole numbers (no fractions or decimals). A GW-BASIC program can start with line number 1 and can go up to line number 65,529.

As stated before line numbers indicate the order the program will be executed. It is a good idea to number statements by 10's (for example, 10, 20, 30, 40, and so forth). Then if you need to insert a statement between statement 20 and statement 30 you can number the new statement 25.

GO TO THE NEXT PAGE...

### LESSON 21B: WRITING A PROGRAM (continued)

#### Procedure: Writing a program

- STEP 1      Load GW-BASIC (see previous instructions).
- STEP 2      At the OK prompt, type  
  
                 **10 print "Hello"**
- STEP 3      Press the Enter key.  
  
                 The cursor will move over to the left hand column.  
                 (You do not get the OK prompt because GW-BASIC  
                 assumes you will enter more BASIC statements.)
- STEP 4      At the cursor, type  
  
                 **20 end**
- STEP 5      Press the Enter key.  
  
                 You have just written a BASIC program. If you have  
                 any typing mistakes see INSTRUCTIONS: EDITING  
                 A PROGRAM in this lesson.

VOL II  
187

#### About the Print Statement

The PRINT statement is used to display text on the CRT. The statement is made up of three parts: line number, the keyword print, and text to be displayed surrounded by quotation marks. These quotation marks are very important, without them, you would get a "Syntax error" from GW-BASIC.

#### About the End Statement

The end statement in BASIC is necessary to signal the end of the program. All BASIC program should have an end statement as the last statement to be executed.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: CREATING A PROGRAM (continued)

#### Procedure: Saving a program

STEP 6 When you have entered a program (or part of a program) and you wish to save it make sure you have a new line (the Enter key has been pressed after the previous statement and the cursor is in the left-most column). Save the program by pressing the **F4** key.

The computer will display:

**SAVE "**

STEP 7 At this point you need to type in a file name. Type **trial"** and press the Enter key.

You have just saved the program in a file named trial.bas to the A drive.

How did the file get the extension bas? GW-BASIC put the extension bas on the file. When you are in GW-BASIC you will always refer to the file as trial. If you are in MS-DOS and wish to copy or delete the file, refer to it as trial.bas.

#### Troubleshooting

If you receive the message "Syntax error", check your spelling and typing.

If you receive the message "Bad file number", check to see that you typed the file name after the F4 (save command) key.

For additional information, check your documentation on GW-BASIC.

### INSTRUCTIONS: EXECUTING A PROGRAM

In GW-BASIC when you want your program to execute, you "run" your program.

#### Procedure: Running a newly created Program

STEP 1 When you have entered a program and have a new line ( the Enter key has been pressed after the previous statement and the cursor is in the left-most column) and you wish to run it, press the **F2** key. Your program will execute as follows.

```
GW-BASIC 3.20
(C) Copyright Microsoft 1983,1984,1985,1986
60332 Bytes free
Ok
10 print "hello"
20 end
RUN
hello
Ok
```

1LIST 2RUN 3LOAD" 4SAVE" 5CONT 6,"LPT1 7TRON 8TROFF 9KEY 0SCREEN

### INSTRUCTIONS: EXECUTING A PROGRAM (continued)

#### Procedure: Running an existing Program

In the previous instructions you created, saved, and entered a program. If you want to quit GW-BASIC and later load GW-BASIC and run your program trial, execute the following steps.

- STEP 2      The program trial has been saved, so quit GW-BASIC (refer to INSTRUCTIONS: LOADING & QUITTING GW-BASIC).
- STEP 3      Load GW-BASIC (refer to INSTRUCTIONS: LOADING & QUITTING GW-BASIC).
- STEP 4      The next step is to "load" the program trial. At the OK prompt, press the **F3** key. The following message will be displayed:

**LOAD "**

- STEP 5      Type in the file name **trial"** and press the Enter key.
- You will notice the read/write light go on as the computer reads the file trial into memory.
- STEP 6      Run the program by pressing the **F2** key.

#### Troubleshooting

If you receive the message "Syntax error", check your spelling and typing.

If you receive the message "Bad file number", check to see that you typed the file name after the F4 (save command). key.

For additional information, check your documentation on GW-BASIC.

### INSTRUCTIONS: EDITING A PROGRAM

#### Procedure: Listing a program

In the previous instructions you created a program. In this section you will learn how to edit that program. It is like using a word processor, but only a small number of commands are available.

STEP 1      With the program trial loaded, press the **F1** key and press the Enter key to see a listing of your program.

#### About listing a program

You input your program in lower case, but GW-BASIC converted it to upper case. In GW-BASIC you can type your program in either upper or lower case; GW-BASIC will convert your program into upper case except for the text fields (the text between the quotation marks).

F1 will list the entire program. If you have a program that is 50 lines long, pressing F1 will display all 50 lines. Because only 24 lines can be seen on the screen at once, part of the program will scroll off the screen.

To view only a few statements, type in the line numbers you wish to see (for example, press F1 and type 30-80 and press the Enter key).

GO TO THE NEXT PAGE...



### INSTRUCTIONS: EDITING A PROGRAM (continued)

#### Procedure: Using the cursor movement keys

STEP 2 Use the following keys to move around the program:

Up arrow	cursor moves up one line
Down arrow	cursor moves down one line
Right arrow	cursor moves right one space
Left arrow	cursor moves left one space
End	cursor moves to end of line
Home	cursor moves to top, left column

#### Procedure: Editing lines

VOL II  
192

STEP 3 Use the following keys:

Backspace	deletes character to the left of the cursor
Del	deletes character at cursor
Ins	inserts characters to the left of the cursor

and edit the program, trial, so that it reads as follows:

```
10 print "Program: Bonus"  
20 end
```

Note: The Ins key toggles you between insert mode and typeover mode. In typeover mode the cursor looks like the underline character. When you press the Ins key to get into insert mode the cursor changes to a square shape.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: EDITING A PROGRAM (continued)

#### Procedure: Inserting statements

Now you will add some new lines to the program.

STEP 4 To insert a statement, move the cursor to the end of the listed program and press the Enter key so that the cursor is at a new line. Type

**15 print "by <insert your name here>"**

STEP 5 Press the Enter key.

STEP 6 Type

**16 print " "**

STEP 7 Press the Enter key.

STEP 8 Type the following two lines, ending each line by pressing the Enter key:

**17 print "This program will calculate a 5% bonus"**  
**18 print "on a total sales volume"**

STEP 9 List the program by pressing the **F1** key and pressing the Enter key.

STEP 10 Save the program:

press the **F4** key  
type the file name **trial**  
press the Enter key.

GO TO THE NEXT PAGE...

## INTRODUCTION TO BASIC

## LESSON 21B

### INSTRUCTIONS: LEARN TO USE

STEP 11 Run the program by pressing **F2**.

STEP 12 Quit GW-BASIC by typing **system** and pressing the Enter key.

### Troubleshooting

If you receive the message "Syntax error", check your spelling and typing.

If you receive the message "Bad file number", check to see that you typed the file name after the F4 (save command). key.

For additional information, check your documentation on GW-BASIC.

### COMMAND SUMMARY

BASIC Keywords	
Print End	Print text to screen End of a program

Function Keys	
F1 F2 F3 F4	List a program Run a program Load a file Save a file

Cursor movement keys	
Up arrow Down arrow Right arrow Left arrow End Home	Move cursor up one line Move cursor down one line Move cursor right one space Move cursor left one space Move cursor to end of line Move cursor to top, left column

Editing keys	
Backspace  Del Ins	Delete character to the left of the cursor Delete character at cursor Insert characters to the left of the cursor

## INTRODUCTION TO BASIC

## LESSON 21B

### PRACTICE TEST

1. To run a GW-BASIC program you would press the:

- a) F1 key.
- b) F2 key.
- c) F3 key.
- d) F4 key.

2. The statements,

```
10 print "Hello World"  
20 print " "  
30 print "This is a BASIC program."
```

would display the following when executed:

- a) Hello World This is a BASIC program.
- b) Hello World  
This is a BASIC program.
- c) Hello World  
  
This is a BASIC program.
- d) Hello World  
  
this is a basic program.

3. Which of the following programs is a complete and correct program?

- a) 10 print "Hello"
- b) 10 print Hello"  
20 end
- c) 10 print "Hello"  
20 end
- d) 10 print "Hello" 20 end

GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

4. Which of the following is a true statement?
  - a) Line numbers are whole numbers that begin each BASIC statement.
  - b) Line numbers are whole numbers that are only used with print statements.
  - c) Line numbers can be whole numbers or fractions but must be placed at the beginning of each line.
  - d) Line numbers are not necessary if you are going to save your GW-BASIC program.
  
5. You have just loaded GW-BASIC and at the OK prompt you press F2 in order to run your program, trial. The computer does not run the program but redisplay the OK prompt. What did you forget to do?
  - a) List the program, trial
  - b) Type the file name
  - c) Press the Enter key
  - d) Load the program, trial

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS.

## FINAL UNIT QUESTIONNAIRE

## LESSONS 21A-21B

You have just finished Lessons 21A and 21B.

Before taking this unit questionnaire, read the  
"Chapter Summary" on page 13.13  
in the textbook.

## INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

VOL II  
198

## QUESTIONS

- 1) The programmer who writes the program does not normally write in machine language. Instead, the programmer uses:
- a) a low-level language.
  - b) a high-level language.
  - c) the English language.
  - d) a source language.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. A significant advantage of FORTRAN is that:
  - a) it has very extensive file handling capabilities and is especially effective in processing alphabetic data.
  - b) it has complete capabilities for formatting printed reports, making it especially useful for business reports.
  - c) it allows easy expression of complete mathematical calculations through the use of arithmetic operators.
  - d) it has the ability to manipulate bits within a byte, giving the programmer the capability of handling data in any manner required.
  
3. The principal advantage of assembler language is that:
  - a) a program can be written which is machine independent and can be run on any type of computer.
  - b) fewer instructions must be written when using assembler language than when using other programming languages.
  - c) assembler language programs are normally easier to write and easier to read and maintain.
  - d) a program can be written which is very efficient in terms of execution time and main computer storage.
  
4. The primary advantage of BASIC is:
  - a) file handling capability.
  - b) ease of use.
  - c) limited set of instructions.
  - d) ability to perform quality graphics.



### QUESTIONS (continued)

5. Which one of the following is NOT a quality of a good program?
- a) Use of remarks to document the program
  - b) Use of blank spaces to improve readability
  - c) Use of indented spaces to improve readability
  - d) Elimination of blank spaces to save memory
6. Pascal was one of the first major programming languages which:
- a) provided statements to encourage using structured programming to implement programs.
  - b) provided a built-in interpreter.
  - c) was standardized by ANSI.
  - d) was capable of running on personal computers as well as large mainframe computers.
7. COBOL was designed to be:
- a) written in English-like form and be self-documenting.
  - b) a low-level language and business oriented.
  - c) a high-level language and mathematically oriented.
  - d) a self-documenting low-level language.

### QUESTIONS (continued)

8. Although it is now considered a general-purpose language, C was originally designed as a programming language for:
- a) systems software.
  - b) compilers.
  - c) word processing programs.
  - d) data base management programs.
9. To SAVE an edited version of a GW-BASIC program, you:
- a) press the **F1** key and press the Enter key.
  - b) press the **F2** key.
  - c) press the **F3** key, type the file name and press the Enter key.
  - d) press the **F4** key, type the file name, and press the Enter key.
- 10 You created a program to display:

Program: Inventory Control

Which of the following is your complete program:

- a) 10 print "Program: Inventory Control"
- b) 10 print "Program: Inventory Control"  
20 end
- c) 10 print "Program Inventory Control" End
- d) 10 print Program: Inventory Control  
20 end

1

2

3

Write and execute a BASIC program which prints out the following:

SAVINGS ACCOUNT PROGRAM

by

<insert your name here>

Your program must be able to run without any errors.  
**Submit a printout of your code to NTS with the Answer Card for Unit 21.**

To obtain a printout of your program, follow the steps below:

VOL II  
201A

- |               |   |
|---------------|---|
| <u>STEP 1</u> | Make sure your program is saved.                                  |
| <u>STEP 2</u> | Quit GW-BASIC.  |
| <u>STEP 3</u> | Load the printer with paper and turn the printer on.              |
| <u>STEP 4</u> | Make sure the printer is on-line.                                 |
| <u>STEP 5</u> | Insert MS-DOS into the B drive.                                   |
| <u>STEP 6</u> | Change the prompt by typing <b>b:</b> and pressing the Enter key. |

GO TO THE NEXT PAGE...

1

2

3

STEP 7      Type **print a:trial.bas**

STEP 8      Press the Enter key.

The print command is a MS-DOS command. Because MS-DOS was placed in the B drive, we changed the prompt to B>. The word print is followed by one space, followed by the complete file name.

STEP 9      Respond to any questions displayed regarding printer output.

The printer will start printing your program.

STEP 10     When finished printing, set the printer to off-line.

STEP 11     Remove the paper printout.

1

2

3

### OBJECTIVES

- Identify the steps in the program development cycle.
- Given flowcharts, identify the three control structures.
- Associate a flowchart with the appropriate pseudocode.

### TO COMPLETE LESSON 22A

STEP 1      Read the major headings in the textbook, pages 16.1 through 16.10.

STEP 2      Read pages 16.1 through 16.10 in the textbook.

STEP 3      Review KEY CONCEPTS for Lesson 22A on the next page of this study guide.

STEP 4      Take the PRACTICE TEST for Lesson 22A.

STEP 5      Score the PRACTICE TEST for Lesson 22A.



### KEY CONCEPTS

#### PAGE NUMBER

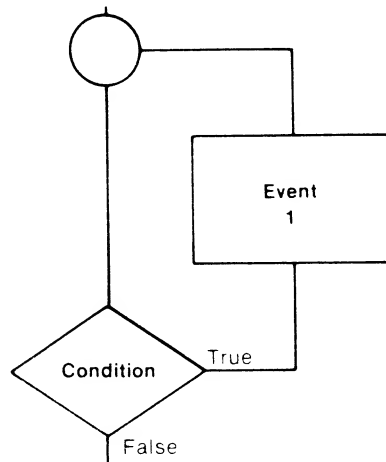
PROGRAM DEVELOPMENT CYCLE	16.1
PROGRAM SPECIFICATION	16.2
RELIABLE	16.2
ROBUST	16.2
MAINTAINABLE	16.2
FLOWCHARTING	16.2
CONTROL STRUCTURES	16.4
STRUCTURED PROGRAMMING	16.4
SEQUENCE CONTROL STRUCTURE	16.4
IF THEN ELSE STRUCTURE	16.5
DO WHILE STRUCTURE	16.5
LOOPING STRUCTURE	16.5
PSEUDOCODE	16.6
SUBROUTINE	16.8
STRUCTURED PROGRAM	16.8
MODULE	16.8

### PRACTICE TEST

1. During the program design phase:
  - a) the program is coded.
  - b) the structure and logic of the program are developed.
  - c) the format of the input record and the contents of the output are specified.
  - d) the program is converted to a source language.
  
2. One of the first methodologies used to assist in program design was the use of:
  - a) wiring schematics of the computer system.
  - b) flowcharts.
  - c) Warnier design methodology.
  - d) IPO charts and pseudocode.
  
3. The diamond-shaped flowcharting symbol is used to represent a(n):
  - a) processing operation.
  - b) input/output operation.
  - c) decision.
  - d) predefined process.

### PRACTICE TEST (continued)

4. Which one of the following is NOT a step in the program development cycle?
- a) Coding
  - b) Testing
  - c) Documentation
  - d) Maintenance
5. The following flowchart is an example of:

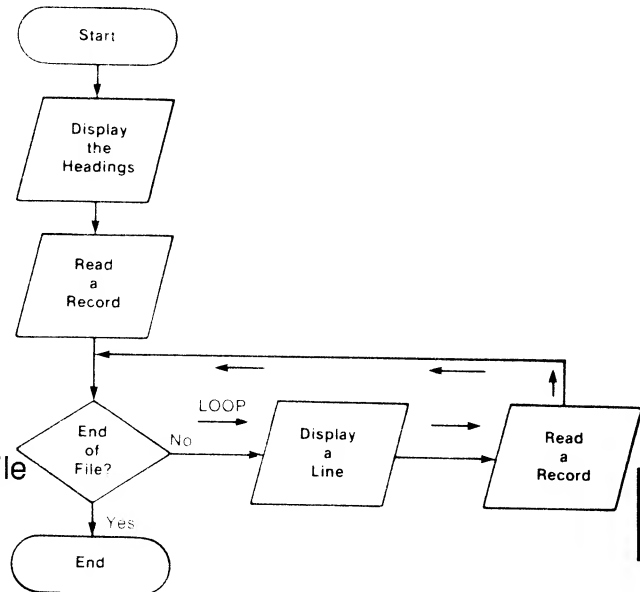


- a) do while structure.
- b) if-then-else structure.
- c) sequence structure.
- d) subroutine structure.

GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

6. Below is a sample flowchart. Identify the pseudocode that is represented in the flowchart.



- a) Display the Headings  
Read a record  
PERFORM UNTIL end of file  
    Display a line  
    Read a record  
ENDPERFORM
- b) Display the Headings  
Read a record  
IF not end of file  
    Display a line  
    Read a record  
ELSE  
ENDIF
- c) Display the Headings  
PERFORM UNTIL end of file  
    Display a line  
    Read a record  
ENDPERFORM
- d) Start  
Display the Headings  
Read a record  
End of File?  
Display a line.  
Read a record  
End

### OBJECTIVES

- Edit and execute a BASIC program to include a LET statement.
- Edit and execute a BASIC program to include an INPUT statement.
- Edit and execute a BASIC program to include an IF THEN ELSE statement.

### TO COMPLETE LESSON 22A

**VOL II**  
**207**

- |               |  |
|---------------|--|
| <u>STEP 1</u> | Read and execute INSTRUCTIONS: USING THE LET STATEMENT on the next page of this study guide. |
| <u>STEP 2</u> | Read and execute INSTRUCTIONS: USING THE INPUT STATEMENT in this lesson.                     |
| <u>STEP 3</u> | Read and execute INSTRUCTIONS: USING THE IF THEN ELSE STATEMENT in this lesson.              |
| <u>STEP 4</u> | Review the COMMAND SUMMARY in this lesson.   |
| <u>STEP 5</u> | Take the PRACTICE TEST for Lesson 22B.   |
| <u>STEP 6</u> | Score the PRACTICE TEST for Lesson 22B.  |

### INSTRUCTIONS: USING THE LET STATEMENT

#### Procedure: Loading the program trial

- STEP 1      Load MS-DOS (see Lesson 14B).
- STEP 2      Load GW-BASIC (see Lesson 21B).
- STEP 3      At the OK prompt press the **F3** key to load a program.
- STEP 4      Type **trial**"
- STEP 5      Press the Enter key.
- STEP 6      At the OK prompt press the **F1** key to list the program.
- STEP 7      Press the Enter key.

The program trial should appear as follows.

```
GW-BASIC 3.20
(C) Copyright Microsoft 1983,1984,1985,1986
60332 Bytes free
Ok
LOAD"trial"
Ok
LIST
10 PRINT "Program: Bonus"
15 PRINT "by <put your name here>"
16 PRINT " "
17 PRINT "This program will calculate a 5% bonus"
18 PRINT "on a total sales volume."
20 END
Ok
```

GO TO THE NEXT PAGE...

1LIST 2RUN 3LOAD" 4SAVE"

### INSTRUCTIONS: USING THE LET STATEMENT (continued)

#### Procedure: Editing the program trial

- STEP 8 If your program does not look like the previous picture, use the cursor movement keys and the editing keys (Del, Backspace, and Ins) to edit your program now.
- STEP 9 Run your program by pressing the **F2** key.
- If your program has an error, list your program again and correct any errors.
- STEP 10 Save your program by:
- pressing the **F4** key  
typing **trial**  
pressing the Enter key.

VOL II  
209

#### Procedure: The LET statement

- STEP 11 With the cursor on a new line (cursor in the left-most column either after the OK prompt or after a carriage return), type the following lines (remember that each line ends by pressing the Enter key):
- ```
20 print " "  
30 let t=15000  
40 print "Total Sales Volume = " t  
100 end
```
- STEP 12 List the program by pressing the F1 key and pressing the Enter key.
- You will notice that the old 20 end statement has been replaced by the statement 20 print. To replace an entire statement, just rewrite it.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: USING THE LET STATEMENT (continued)

#### Procedure: Executing the LET statement

STEP 13 With the cursor on a new line (cursor in the left-most column either after the OK prompt or after a carriage return), press the **F2** key to run the program.

#### About the LET statement

The let statement assigns a value (for example 15000) to a variable (for example t). You can think of a variable as a name given to a location in memory. In the program above the value 15000 is stored in the location t.

#### About variables

Whenever you want to access the contents of that memory location you use the variable name. You can assign a variable:

|                 |         |
|-----------------|---------|
| a numeric value | t=15000 |
|                 | t=5+6   |

|                       |                |
|-----------------------|----------------|
| an alphanumeric value | p\$="333-3333" |
|                       | n\$="John"     |

Variables that contain numeric values can be processed arithmetically. Variables that contain alphanumeric (alphabetic and/or numeric) values cannot be processed arithmetically. In the above example, a phone number is alphanumeric because you would not add two phone numbers together.

GO TO THE NEXT PAGE...



### INSTRUCTIONS: USING THE LET STATEMENT (continued)

Notice the names of the variables.

If the variable is to hold a numeric value, you can use a single letter (A, V, or Q) or a letter with one digit (E5, I8, or P4).

If the variable is to hold an alphanumeric value, you can use a single letter with a \$ (A\$, V\$, or Q\$) or a letter with one digit and \$ (E5\$, I8\$, or P4\$).

#### Using numbers in BASIC

In the program, trial, t=15000. Is t=\$15,000 a legal statement? The answer is no. Here are some rules regarding number use in variables:

- only one decimal point is allowed
- negative signs (-) are allowed

ALLOWED: 4.5    -8    8.80

- commas are NOT allowed
- dollar signs are NOT allowed
- dash signs (-) are not allowed between numbers

NOT ALLOWED: \$3.00 333-1    12,000

GW-BASIC can display numbers in different formats (including numbers with commas and dollar signs). Refer to your documentation on GW-BASIC for information.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: USING THE LET STATEMENT (continued)

#### About the PRINT statement

You have used the print statement to print text enclosed in quotation marks. You can also print the value of a variable by placing it outside the quotation marks. Look at the following examples:

| <u>statement</u>        | <u>output</u> |
|-------------------------|---------------|
| print "hello"           | hello         |
| let t=6<br>print t      | 6             |
| let t=9<br>print "t ="t | t=9           |

It is important to know that you cannot print a variable until a value has been assigned to that variable. If the value is not assigned, GW-BASIC will assign the value of zero.

|                 |     |
|-----------------|-----|
| 10 print "t ="t | t=0 |
| 20 let t=9      |     |
| 30 end          |     |

VOL II  
212

#### Procedure: Executing the LET statement

STEP 14 With the cursor on a new line (cursor in the left-most column either after the OK prompt or after a carriage return), type the following lines (remember that each line ends by pressing the Enter key):

```
50 print " "  
60 let b=t*.05  
70 print "Bonus for 1987 = " b
```

GO TO THE NEXT PAGE...

### INSTRUCTIONS: USING THE LET STATEMENT (continued)

STEP 15 List the program by pressing the F1 key and pressing the Enter key.

You will notice that these lines have been inserted and that the GW-BASIC keywords and variable names have been converted to upper case.

STEP 16 With the cursor on a new line (cursor in the left-most column either after the OK prompt or after a carriage return), press the **F2** key to run the program.

STEP 17 Save your program by:  
pressing the **F4** key  
typing **trial**  
pressing the Enter key.

### INSTRUCTIONS: USING THE LET STATEMENT (continued)

#### About expressions

In statement 60 you assigned the variable b the value equal to t multiplied by .05.

Here are some of the arithmetic operations available:

|                |   |
|----------------|---|
| addition       | + |
| subtraction    | - |
| multiplication | * |
| division       | / |

Operations are performed in the following order:

1. Anything in parentheses is calculated first.
2. Multiplication and division calculated next in the order from left to right.
3. Multiplication and division next in the order from left to right.

VOL II  
214

For example

$$4*6+7=24+7=31$$

4\*6+7 does NOT equal 4\*13 or 52

#### Troubleshooting

If you receive the message "Bad file number" make sure you typed the file name and pressed the enter key.

If you receive the message "Syntax error", check your typing/spelling.

For additional information refer to your documentation on GW-BASIC.

### INSTRUCTIONS: USING THE INPUT STATEMENT

#### Adding the INPUT statement

STEP 1 Continuing with editing program, trial, and with the cursor on a new line type the following lines (remember that each line ends by pressing the Enter key):

```
25 print "Type in the Total Sales Volume for 1987"  
30 input t
```

STEP 2 List the program by pressing the **F1** key and pressing the Enter key.

You have inserted a statement 25, and you have replaced statement 30.

STEP 3 With the cursor on a new line (cursor in the left-most column either after the OK prompt or after a carriage return), press the **F2** key to run the program.

Run the program several times, inputting different values. If you enter a value with a comma, dollar sign or more than one decimal, you will get the message: "Redo from the start", followed by another chance to input a value.

If you enter a very large number it will be converted to scientific notation.

STEP 4 Save your program by:  
pressing the **F4** key  
typing **trial**  
pressing the Enter key.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: USING THE INPUT STATEMENT (continued)

#### About the INPUT statement

The input statement stops the execution of the statements and waits for the user to input a value. This value is then stored in the variable.

When the computer executes the input statement it stops and displays a ?.

#### Troubleshooting

If you receive the message "Syntax error", check your typing/spelling.

If you receive the message "Redo from start", your input value was incorrect (\$, comma, etc.). Try a new input value with only numbers.

For additional information refer to your documentation on GW-BASIC.

### INSTRUCTIONS: USING THE IF THEN ELSE STATEMENT

#### Procedure: Adding the IF THEN ELSE statement

STEP 1 With the cursor on a new line type the following lines:

```
80 if b>500 then 90 else 100
90 print "Congratulations, you had a very good year!"
```

STEP 2 List the program by pressing the **F1** key and pressing the Enter key.

STEP 3 With the cursor on a new line (cursor in the left-most column either after the OK prompt or after a carriage return), press the **F2** key to run the program.

When you receive the ?, input a numeric value.

STEP 4 Save your program by:

- pressing the **F4** key
- typing **trial**
- pressing the Enter key.

STEP 5 Exit GW-BASIC by typing **system** and pressing the Enter key.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: USING THE IF THEN ELSE STATEMENT

#### About the IF THEN ELSE statement

The form of the IF THEN ELSE statement is:

line number IF condition THEN line number  
ELSE line number

In the program trial, statement 80 reads: if the value stored in variable b is greater than 500 then go to line number 90 if not (else) then go to line number 100.

Earlier you learned that BASIC statements were executed in the sequence of the line numbers unless a statement changed execution to another line number. The IF THEN ELSE statement can change the order of execution.

One last note, if you specify a line number to go to in the IF THEN ELSE statement that does not exist, you will get an error.

VOL II  
218

#### About logical expressions

The first part of the IF THEN ELSE statement takes a condition that must be evaluated as either true or false. Here are some of the logical operators you can use to construct conditions:

|                          |    |
|--------------------------|----|
| less than                | <  |
| great than               | >  |
| equal to                 | =  |
| less than or equal to    | <= |
| greater than or equal to | >= |
| not equal to             | <> |



### COMMAND SUMMARY

| BASIC Keywords |                                           |
|----------------|-------------------------------------------|
| print          | Print text to screen                      |
| let            | Assign value to variable                  |
| input          | Assign user input to variable             |
| if then else   | Evaluate condition and transfer execution |
| end            | End of a program                          |

| Arithmetic Operators |   |
|----------------------|---|
| Addition             | + |
| Subtraction          | - |
| Multiplication       | * |
| Division             | / |

**VOL II**  
**219**

| Logical Operators        |    |
|--------------------------|----|
| Less than                | <  |
| Greater than             | >  |
| Equal to                 | =  |
| Less than or Equal to    | <= |
| Greater than or Equal to | >= |
| Not Equal to             | <> |

### PRACTICE TEST

1. What is wrong with the following program:

```
10 let t=16
20 print "t = " t
30 print b
40 input b
50 end
```

- a) The input statement should be line 30 and the print b statement should be line 40.
- b) It's missing an if then else statement.
- c) Statement 20 should read: print t = t.
- d) The program is correct.

2. The output from the following statements is:

```
10 let t=16
20 print "t = " t
```

- a) t = t
- b) T = 16
- c) t = T
- d) t = 16

3. What BASIC statement(s) would stop the execution of the program and display a ?

- a) print
- b) input
- c) let
- d) if then else

### PRACTICE TEST (continued)

4. Which of the following is NOT a legal variable name?

- a) A5
- b) CPO
- c) N\$
- d) H

5. What is wrong with the following program?

```
10 input t
20 if t<5 then 30 else 40
30 end
```

- a) The variable t should be an alphanumeric variable.
- b) Statement 20 should read: if t<5 then 40 else 30.
- c) There is no line 40.
- d) There is no let statement.

6. Which of the following statements is correct?

- a) let t = \$4.00
- b) let p = 555-1212
- c) let a = 300+8989
- d) let b = 5,000\*77

**GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS.**

### OBJECTIVES

- Name the five common logic problems that occur in business applications.
- Interpret a decision table.
- Describe the steps and procedures required to test a program.

### TO COMPLETE LESSON 22C

- |               |                                                                          |
|---------------|--------------------------------------------------------------------------|
| <u>STEP 1</u> | Read the major headings in the textbook, pages 16.11 through 16.29.      |
| <u>STEP 2</u> | Read pages 16.11 through 16.29 in the textbook.                          |
| <u>STEP 3</u> | Review KEY CONCEPTS for Lesson 22C on the next page of this study guide. |
| <u>STEP 4</u> | Take the PRACTICE TEST for Lesson 22C.                                   |
| <u>STEP 5</u> | Score the PRACTICE TEST for Lesson 22C.                                  |

### KEY CONCEPTS

#### PAGE NUMBER

|                        |       |
|------------------------|-------|
| EGOLESS PROGRAMMING    | 16.12 |
| STRUCTURED WALKTHROUGH | 16.12 |
| END-OF-FILE-INDICATOR  | 16.14 |
| COUNTER                | 16.16 |
| ACCUMULATOR            | 16.16 |
| COMPARING              | 16.16 |
| PROGRAM INITIALIZATION | 16.18 |
| TABLES                 | 16.20 |
| ARRAYS                 | 16.20 |
| ARRAY ELEMENTS         | 16.21 |
| SUBSCRIPT              | 16.21 |
| DECISION TABLE         | 16.24 |
| CONDITION ENTRY        | 16.24 |
| ACTION ENTRY           | 16.24 |
| SYNTAX                 | 16.25 |
| STUB TESTING           | 16.27 |
| PROGRAM EFFICIENCY     | 16.28 |
| PROGRAM MAINTENANCE    | 16.29 |

### PRACTICE TEST

1. List the five common logic problems that occur in business applications.

---

---

---

---

---

2. A decision table is:
  - a) a graphical representation of the logical decisions that must be made concerning certain conditions.
  - b) any data defined and referenced by means of a subscript within a program.
  - c) used within a program as a tool to develop complex logic.
  - d) used as a part of the IF THEN ELSE statement to document comparing operations.
3. The strategy of partially coding the program before the entire program is coded is called:
  - a) stub testing.
  - b) partial coding.
  - c) segment programming.
  - d) preview testing.

GO TO THE NEXT PAGE..

### PRACTICE TEST (continued)

4. Using the decision table pictured below, rule 3 states:

|            |                                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------|-----------------------------------|---|---|---|---|---|---|---|---|
| CONDITIONS | Account Current                   | Y | Y | Y | Y | N | N | N | N |
|            | Purchase Within Credit Limit      | Y | N | Y | N | Y | N | Y | N |
|            | Payment Received Last 25 Days     | Y | Y | N | N | Y | Y | N | N |
| ACTIONS    | Unconditionally Approve           | X |   |   |   |   |   |   |   |
|            | Approve. Subject to Credit Office |   |   | X |   |   |   |   |   |
|            | Deny. Subject to Credit Office    |   | X |   | X | X | X | X |   |
|            | Send to Credit Office             |   | X | X | X | X | X | X |   |
|            | Unconditionally Deny              |   |   |   |   |   |   |   | X |

- a) if the account is NOT current,  
the purchase is within the credit limit, and the payment  
has NOT been received in  
the last 25 days,  
then the credit is approved subject to review by the  
credit office and the credit request is sent to the credit  
office.
- b) if the account is current,  
the purchase is within the credit limit, and the payment  
has been received in the  
last 25 days,  
then the credit is approved subject to review by the  
credit office.
- c) if the account is current,  
the purchase is within the credit limit, and the payment  
has NOT been received in  
the last 25 days,  
then the credit is approved subject to review by the  
credit office and the credit request is sent to the credit  
office.
- d) none of the above.

You have just finished Lessons 22A, 22B and 22C.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 16.30 and 16.31 in the textbook.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

VOL II  
226

### QUESTIONS

1. The do while control structure is used to implement the logic of:
  - a) looping.
  - b) selecting.
  - c) comparing.
  - d) performing a sequence of operations one after the other.

GO TO THE NEXT PAGE...



### QUESTIONS (continued)

2. A subroutine is defined as a:
  - a) module that is in a hierarchy chart.
  - b) series of instructions used only once in a program.
  - c) series of instructions that is repeated a given number of times in a loop.
  - d) a series of computer instructions which together accomplish a given task and may be called from more than one place in a program.
  
3. The program development cycle consist of the following:
  - a) program design, program coding, program testing, and input, processing, and output.
  - b) designing, coding, implementing, testing, and documenting programs.
  - c) review of program specifications, program design, program coding, program testing, and program documentation.
  - d) structured design, structured programming structured walkthroughs, structured testing, and documenting.
  
4. To decompose a program into a series of modules:
  - a) the program specifications are analyzed, and a hierarchy chart is drawn.
  - b) A flowchart is used.
  - c) three basic control structures are used.
  - d) the major processing tasks on the IPO Chart are analyzed.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

5. The three basic control structures used in structured programming are:
- a) sequence, IF THEN ELSE, do when
  - b) select, IF THEN ELSE, do when
  - c) sequence, IF THEN ELSE, do while
  - d) select, IF THEN ELSE, do while
6. English-like statements that are used to express the logic of a program are called:
- a) source statements.
  - b) structured programming control statements.
  - c) pseudocode.
  - d) IPO statements.
7. The value of the flowchart as a program design tool is that it:
- a) provides a scientific method for designing a program.
  - b) provides a method for decomposing a program into modules.
  - c) allows programmers to develop standardized logic leading to the solution of a problem.
  - d) graphically represents the steps in the solution of a problem.

### QUESTIONS (continued)

8. When developing the logic for a program to read 50 employee records and display the output on a CRT screen:
- a) 50 read statements and 50 write statements must be specified in the program.
  - b) a counter must be established to count the number of records read and processed.
  - c) a program loop is entered and records are read and processed until the end-of-file indicator is detected.
  - d) a loop is entered and controlled by an IF THEN ELSE control structure.
9. What is wrong with the following BASIC program:
- ```
10 print t
20 end
```
- a) the word print should be in upper case.
  - b) no value has been assigned to the variable t.
  - c) there is no if then else statement
  - d) the program is correct.
10. Which of the following BASIC statement is used to change the order of execution?
- a) input
  - b) if then else
  - c) print
  - d) end

# COMPULIT - Unit 22



## PROJECT

## LESSON 22A-22C

Write and execute a BASIC program to calculate a savings account balance. Your program must meet the requirements listed below, and must be able to run without any errors.

1. The savings account should start with a balance of \$50.00.
2. The program should ask the user if they are making a deposit or a withdrawal.
3. The program should ask for the amount of the deposit or withdrawal.
4. The program should ask the user if they have any additional deposits or withdrawals. If the user answers yes, then the program should complete those transactions; if the user answers no, then the program should display the current balance in the savings account.

VOL II  
229A

**When your program is finished, submit a printout of the code to NTS along with your Answer Card for Unit 22** (see Project for Lesson 21 on how to obtain a printout).

1

2

3

### OBJECTIVES

- Renumber a BASIC program.
- Edit a BASIC program to include a GO TO statement.
- Use the IF THEN ELSE statement to create a loop.

### TO COMPLETE LESSON 23A

STEP 1      Read and execute INSTRUCTIONS: RENUMBERING  
A PROGRAM in this lesson.

STEP 2      Read and execute INSTRUCTIONS: USING THE GO  
TO STATEMENT on the next page of this study  
guide.

STEP 3      Read and execute INSTRUCTIONS: CREATING A  
LOOP in this lesson.

STEP 4      Take the PRACTICE TEST for Lesson 23B.

STEP 5      Score the PRACTICE TEST for Lesson 23B.

### INSTRUCTIONS: RENUMBERING A PROGRAM

#### Procedure: Loading the program trial

- |               |   |
|---------------|---|
| <u>STEP 1</u> | Load MS-DOS (see Lesson 14B).                                 |
| <u>STEP 2</u> | Load GW-BASIC (see Lesson 21B).                               |
| <u>STEP 3</u> | At the OK prompt press the <b>F3</b> key to load the program. |
| <u>STEP 4</u> | Type <b>trial</b> "   |
| <u>STEP 5</u> | Press the Enter key.  |
| <u>STEP 6</u> | At the OK prompt press the <b>F1</b> key to list the program. |
| <u>STEP 7</u> | Press the Enter key.  |

VOL II  
231

#### Procedure: Renumbering

- STEP 8 With the cursor on a new line, type **renum** and press the Enter key.
- The OK prompt will appear on the screen.
- This command will renumber your statements in increments of 10. This is a command similar to list or run. You just issue the command when the cursor is on a new line.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: RENUMBERING A PROGRAM (continued)

STEP 9 At the OK prompt press the **F1** key to list the program.

STEP 10 Press the Enter key.

The program trial should appear as follows.

```
GW-BASIC 3.20
(C) Copyright Microsoft 1983,1984,1985,1986
60332 Bytes free
Ok
LOAD"trial"
Ok
LIST
10 PRINT "Program: Bonus"
20 PRINT "by <put your name here>"
30 PRINT " "
40 PRINT "This program will calculate a 5% bonus"
50 PRINT "on a total sales volume."
60 PRINT " "
70 PRINT "Type in the Total Sales Volume for 1987"
80 INPUT T
90 PRINT "Total Sales Volume = " T
100 PRINT " "
110 LET B=T*.05
120 PRINT "Bonus for 1987 = " B
130 IF B>500 THEN 140 ELSE 150
140 PRINT "Congratulations, you had a very good year!"
150 END
Ok
1LIST 2RUN 3LOAD" 4SAVE" 5CONT 6,"LPT1 7TRON 8TROFF 9KEY 0SCREEN
```

VOL II  
232

### Troubleshooting

If you receive the message "Bad file number" make sure you typed the file name and pressed the Enter key.

For additional information refer to your documentation on GW-BASIC.



### INSTRUCTIONS: USING THE GO TO STATEMENT

#### Procedure: Adding a goto statement

STEP 1 With the cursor on a new line type:

```
130 if b > 500 then 140 else 160
150 go to 170
160 print "You need to improve your sales volume"
170 print "THIS IS THE END OF THE PROGRAM"
180 end
```

STEP 2 List the program by pressing the **F1** key and pressing the Enter key.

STEP 3 With the cursor on a new line, press the **F2** key to run the program.

STEP 4 Save your program by:  
pressing the **F4** key  
typing **trial**  
pressing the Enter key.

Remember to save your program frequently.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: USING THE GO TO STATEMENT (continued)

#### About the go to statement

The go to statement transfers the execution of the program to a line number. Like the if then else statement the go to statement can change the order of execution.

Note that you will get an error message if you specify a line number that is not in the program.

#### Troubleshooting

If you receive the message "Bad file number" make sure you typed the file name and pressed the enter key.

If you receive the message "Undefined line number" check the line numbers in the go to and if then else statement and pressed the enter key.

If you receive the message "Syntax error", check your typing/spelling.

For additional information refer to your documentation on GW-BASIC.

### INSTRUCTIONS: CREATING A LOOP

#### Procedure: Using the if then else statement to create a loop

STEP 1 With the cursor on a new line type:

```
170 print "Would you like to calculate another bonus?"
180 print "Type Y for yes or N for no and press Enter "
190 input a$
200 if a$="Y" then 40 else 210
210 print "THIS IS THE END OF THE PROGRAM"
220 end
```

STEP 2 List the program by pressing the **F1** key and pressing the Enter key.

STEP 3 With the cursor on a new line, press the **F2** key to run the program.

STEP 4 Save your program by:  
pressing the **F4** key  
typing **trial**  
pressing the Enter key.

### INSTRUCTIONS: USING THE GO TO STATEMENT

#### About the loop

We have used the if then else statement to create a loop. How many times will the loop be executed? That will depend on the input of the user. As long as the user types an upper case Y then the program will continue to execute. If the user types any other letter (including lower case "y") the program will end.

The added input statement accepts an alphanumeric variable and therefore is named A\$. Notice the quotation marks around the "Y" in the if then else statement. These are necessary, without them you will get an error message.

#### Troubleshooting

If you receive the message "Syntax error", check your typing/spelling.

If you receive the message "Undefined line number", check your line numbers in your go to and if then else statements.

For additional information refer to your documentation on GW-BASIC.

### PRACTICE TEST

1. Look at the following program:

```
1  print "hello"  
2  print " "  
3  end
```

You would like to insert lines in this program. What would be your first step?

- a) Renumber the lines
- b) Add line number 4
- c) Replace line number 1
- d) Reload the program

**VOL II**  
**237**

2. What is the best description of the output of this program?

```
10 print "hello"  
20 go to 10  
30 end
```

- a) This program will print the word hello and then end.
- b) This program will continue to print hello and never end (it is in an endless loop).
- c) This program will print the word hello ten times and then end.
- d) This program will print the word hello until the user inputs a N to stop it.

GO TO THE NEXT PAGE...

### PRACTICE TEST (continued)

3. What is wrong with the following program?

```
10 print " Type in a number and press the Enter key"
20 input a
30 print "Type in another number and press Enter."
40 input b
50 if a>b then 60 else 70
60 print a " is greater than " b
70 print a " is less than " b
80 end
```

- a) replace the statement: 50 if a>b then 70 else 60
- b) add the statement: 75 go to 80
- c) add the statement: 65 go to 80
- d) replace the statement: 70 print a "is greater than " b

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

### OBJECTIVES

- Edit a BASIC program to include REMARK statements.
- Edit a BASIC program to include CLEAR SCREEN statements.
- Print your BASIC program.

### TO COMPLETE LESSON 23B

VOL II  
239

- |               |  |
|---------------|--|
| <u>STEP 1</u> | Read and execute INSTRUCTIONS: USING THE REM STATEMENT on the next page of this study guide. |
| <u>STEP 2</u> | Read and execute INSTRUCTIONS: USING THE CLS STATEMENT in this lesson.                       |
| <u>STEP 3</u> | Read and execute INSTRUCTIONS: PRINTING YOUR PROGRAM in this lesson.                         |
| <u>STEP 4</u> | Take the PRACTICE TEST for Lesson 23B.   |
| <u>STEP 5</u> | Score the PRACTICE TEST for Lesson 23B.  |

### INSTRUCTIONS: USING THE REM STATEMENT

#### Procedure: Adding the REM statements

STEP 1 With the cursor on a new line type:

```
1 rem This program is used to calculate a bonus based
2 rem on total sales volume.
3 rem the variable t references the Total Sales Volume
4 rem the variable b references the bonus
```

STEP 2 With the cursor on a new line, list the program by pressing the **F1** key and pressing the Enter key.

If the program scrolls off the screen, press **F1**, type **1-20**, press the Enter key. This will display lines 1 through 20 of the program.

STEP 3 With the cursor on a new line, type **renum** and press the Enter key.

STEP 4 With the cursor on a new line, press the **F2** key to run the program.

STEP 5 Save your program by:  
pressing the **F4** key  
typing **trial**  
pressing the Enter key.

GO TO THE NEXT PAGE...



### INSTRUCTIONS: USING THE REM STATEMENT

#### About the REM statement

The rem (or remark) statement allows the programmer to document the program. The programmer can see the REM statements when viewing the code, but the user does not see them when the program is executed.

It is a good idea to use the rem statement to:

- describe the purpose of the program
- document the use of variables
- document the logic used

VOL II  
241

#### Procedure: Adding more REM statements

##### STEP 6

Add any additional rem statements to the program now. Be sure to include a line number, the keyword REM followed by any text.

### INSTRUCTIONS: USING THE CLS STATEMENT

#### Procedure: Adding CLS statements

- STEP 1 With the cursor on a new line type:
- 5 cls**
- STEP 2 Press the Enter key.
- STEP 3 With the cursor on a new line, press the **F2** key to run the program.
- You notice that the first thing that occurred was that the screen cleared and that the program was executed and displayed text from the top of the screen.
- STEP 4 With the cursor on a new line type:
- 125 cls**
- STEP 5 Press the Enter key.
- STEP 6 With the cursor on a new line, press the **F2** key to run the program.
- The screen clears after the user inputs a value.

GO TO THE NEXT PAGE...

### INSTRUCTIONS: USING THE CLS STATEMENT (continued)

#### Procedure: About the CLS statement

What would happen if you placed a cls statement before the input statement? The program would display the text , clear the screen, then wait for input. The problem is that you would not be able to read the text because the screen would be cleared.

#### Procedure: Adding more CLS statements

STEP 7      Add any additional cls statements to the program.

STEP 8      Save your program.

### INSTRUCTIONS: PRINTING YOUR PROGRAM

- STEP 1      Make sure your program is saved.
- STEP 2      Quit GW-BASIC.
- STEP 3      Load the printer with paper and turn the printer on.
- STEP 4      Make sure the printer is on-line.
- STEP 5      Insert MS-DOS into the B drive.
- STEP 6      Change the prompt by typing **b:** and pressing the Enter key.
- STEP 7      Type **print a:trial.bas**
- STEP 8      Press the Enter key.
- The print command is a MS-DOS command. Because MS-DOS was placed in the B drive, we changed the prompt to B>. The word print is followed by one space, followed by the complete file name.
- STEP 9      Respond to any questions displayed regarding printer output.
- The printer will start printing your program.
- STEP 10     When finished printing, set the printer to off-line.
- STEP 11     Remove the paper printout.

### PRACTICE TEST

1. What is wrong with the following program?

```
10 cls
20 let t=16
30 print "t = " t
40 cls
50 input b
60 print b
70 end
```

- a) Statement 10 cls should be removed.
- b) Statement 40 cls should be placed after the input statement.
- c) A cls statement should be placed before line 70.
- d) A cls statement should be placed after line 20.

**VOL II**  
**245**

2. The rem statement is used for:

- a) indicating what variables are used for.
- b) documenting logic used in the program.
- c) describing the purpose of the program.
- d) all of the above.

3. What MS-DOS command is used to obtain a hardcopy of a BASIC program?

- a) Print
- b) Output
- c) Input
- d) List

**GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS.**

### OBJECTIVE

- Create a program with a do while structure.
- Use the FOR NEXT statement in a BASIC program.
- Debug and execute a BASIC program.

### TO COMPLETE LESSON 23C

STEP 1      Read and execute INSTRUCTIONS: USING THE  
FOR NEXT STATEMENT in this lesson.

STEP 2      Take the PRACTICE TEST for Lesson 23C.

STEP 3      Score the PRACTICE TEST for Lesson 23C.

### INSTRUCTIONS: USING THE FOR NEXT STATEMENT

#### Procedure: Creating a new program

- STEP 1      With MS-DOS loaded, insert GW-BASIC into the A drive and close the disk drive door.
- STEP 2      Load GW-BASIC (see Lesson 21B).
- STEP 3      At the OK prompt type the following program (remember to end each line by pressing the Enter key):

```
10 rem This program is used to calculate your yearly gross pay.
20 rem n$ holds last name; m holds number of months worked
30 rem a holds amount earned in a month; t holds total earned
40 rem c is a counter for the loop; c1 is a counter of months
50 rem t must be initialized to zero; c1 must be initialized to one
60 let t=0
70 let c1=1
80 cls
90 print "Type your last name and press the Enter key"
100 input n$
110 cls
120 print "Type in the number of months you've worked this year"
130 input m
140 cls
150 for c=1 to m
160   print "Type the amount you earned in month " c1
170   print "Do not use $ or commas, you may use decimals"
180   input a
190   cls
200   let c1=c1+1
210   let t=t+a
220 next c
230 print "Year to date gross pay for " n$ " is $" t
240 end
```

### INSTRUCTIONS: USING THE FOR NEXT STATEMENT (continued)

#### Procedure: Saving a new program

STEP 4      Save your program by:  
  
                  pressing the **F4** key  
                  typing **salary**  
                  pressing the Enter key.

Remember to save your program frequently.

STEP 5      With the cursor on a new line, press the **F2** key to run the program.

STEP 6      If you receive any error messages or the program does not execute properly, list the program by pressing the **F1** key and pressing the Enter key.

STEP 7      Edit your program until your program will run without any errors.

STEP 8      Save your program, salary.

VOL II  
248

#### About the for next statement

The for next statement sets up a loop to repeat a set of statements using a counter. The counter increments and when it gets to a certain value the loop is terminated.

GO TO THE NEXT PAGE...



### INSTRUCTIONS: USING THE FOR NEXT STATEMENT (continued)

Another way to view the program salary is:

```
Ask for users last name
Accept input for last name and store it
Ask for number of month worked to date
Accept input for months and store it.
PERFORM UNTIL no more months
    Ask for amount earned
    Accept input for amount and store it
    Add amount to total earned
ENDPERFORM
Display total amount earned to date
```

VOL II  
249

#### Troubleshooting

If you receive the message "For without next" or "Next without for" make sure you typed the for next statement correctly.

If you receive the message "Bad file number" make sure you typed the file name and pressed the enter key.

If you receive the message "Syntax error", check your typing/spelling.

For additional information refer to your documentation on GW-BASIC.

### PRACTICE TEST

1. What is the output for the following program:

```
10 for i = 1 to 3
20   print "hello"
30 next i
40 end
```

- a) hello hello hello
- b) hello  
hello
- c) hello  
hello  
hello
- d) hello

2. What is the output for the following program:

```
10 let a=10
20 let b=10
30 for i = 1 to 4
40   let b=b*a
50   print b
60 next i
70 end
```

- |       |        |
|-------|--------|
| a) 10 | c) 100 |
| 20    | 1000   |
| 30    | 10000  |
| 40    | 100000 |
| b) 10 | d) 20  |
| 100   | 30     |
| 1000  | 40     |
| 10000 | 50     |

GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS

## FINAL UNIT QUESTIONNAIRE

## LESSONS 23A-23C

You have just finished Lessons 23A, 23B and 23C.

### INSTRUCTIONS

- STEP 1      Take an answer card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your unit questionnaire.

VOL II  
251

### QUESTIONS

1. What would you do to correct the following program?

```
10 print "Type in your commission for the year"  
20 input c  
30 if c>500 then 40 else 60  
40 print "Congratulations!"  
50 end
```

- a) input statement come after the if then else statement
- b) replace statement 30 with: if c>500 then 40 else 50
- c) replace statement 30 with: if c>500 then 40 else 10
- d) replace statement 30 with: go to 60

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. What is the output from the following program?

```
10 print "green"  
20 go to 50  
30 print "red"  
40 print "blue"  
50 end
```

- a) green
- b) green  
red  
blue
- c) red  
blue
- d) green  
end

3. What is the output from the following statements if the user types a 5 at the input statement?

```
10 print "Type a number"  
20 input n  
30 if n>5 then 40 else 60  
40 print "xxx"  
50 go to 70  
60 print "yyy"  
70 end
```

- a) Type a number
- b) Type a number  
xxx
- c) Type a number  
yyy
- d) Type a number  
xxx  
yyy

**QUESTIONS (continued)**

4. Which of the following statements makes use of a counter?

- a) Let
- b) Go to
- c) If then else
- d) For next

5. Which of the following statements is used to add documentation to your program?

- a) Print
- b) Rem
- c) Cls
- d) Doc

**VOL II**  
**253**

6. What is the output for the following program?

```
10 let a=5
20 for c=1 to 3
30 print a
40 let a=a+1
50 next c
60 end
```

- a) 5  
6  
7
- b) 1  
2  
3
- c) 5  
6  
7
- d) 5  
10  
15

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

7. Using the program below, what statement will be executed immediately after statement 30:

```
10 let a=5
20 let b=8
30 if a<b then 40 else 60
40 print "xxx"
50 go to 70
60 print "yyy"
70 end
```

- a) line 40
- b) line 50
- c) line 60
- d) line 70

8. When executed, the following program displays nothing on the screen. How would you correct it?

```
10 print" Welcome to COMPULIT"
20 print " "
30 print " This is a sample program"
40 print " "
50 cls
60 end
```

- a) Lines 20 and 40 should be removed from the program.
- b) Line 50 should be removed from the program.
- c) Line 60 should be removed from the program.
- d) A cls statement should be added to the program after line 20.

### QUESTIONS (continued)

9. How would you correct the following program?

```
10 let j=5
20 for d=1 to 3
30 print j
40 let j=j+1
50 next j
60 end
```

- a) Line 50 should read: next d
- b) Line 50 should be deleted.
- c) Line 50 should read: next
- d) This program would run without any errors.

**VOL II**  
**255**

10. Which of the following programs has NO errors:

- a) rem This is a very short program.  
print "hello"  
end
- b) 10 ram This is a very short program  
20 print "hello"  
30 end
- c) 10 rem This is a very short program  
20 print "hello"  
30 end
- d) 10 rem This is a very short program  
30 print "hello"  
20 end

# COMPULIT - Unit 23



## PROJECT

## LESSON 23A-23C

Write and execute a BASIC program to calculate a checking account balance. Your program must meet the requirements listed below, and must be able to run without any errors.

1. The checking account should start with a balance of \$100.00.
2. The program should ask the user how many transactions (number of checks and/or deposits to the account) they are processing .
3. For that number of transactions, the program should ask the user for the amount of each transaction. (Hint: the user may put in negative numbers for checks and positive numbers for deposits).
4. The program should ask the user if they have any additional transactions. If the user answers yes, then the program should process those transactions; if the user answers no, then the program should display the current balance in the savings account.

VOL II  
255A

**When your program is finished, submit a printout of the code to NTS along with your Answer Card for Unit 22** (see Project for Lesson 21 on how to obtain a printout).



1

2

3

### OBJECTIVES

- Identify and describe the three broad classifications of systems.
- List the six phases in the scientific approach to computer systems design.
- Describe in detail features of the six phases in the scientific approach to computer systems design.
- Describe the use of data flow diagrams, system flowcharts, display screen layout forms, and Gantt charts in systems analysis and design.

VOL II  
256

### TO COMPLETE LESSON 24A

- STEP 1      Read the major headings in the textbook, pages 15.1 through 15.13.
- STEP 2      Read pages 15.1 through 15.13 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 24A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 24A.
- STEP 5      Score the PRACTICE TEST for Lesson 24A.

### KEY CONCEPTS

#### PAGE NUMBER

SYSTEM	15.1
PROCEDURES	15.1
OPERATIONAL SYSTEM	15.1
MANAGEMENT INFORMATION SYSTEM (MIS)	15.2
DECISION SUPPORT SYSTEMS	15.2
SYSTEMS ANALYSIS AND DESIGN	15.3
PRELIMINARY INVESTIGATION	15.3
PERSONAL INTERVIEW	15.3
DETAILED INVESTIGATION AND ANALYSIS	15.4
DATA FLOW DIAGRAM	15.4
PROTOTYPE	15.6
SYSTEM OUTPUT	15.6
DATA DICTIONARY	15.8
SYSTEM FLOWCHART	15.8
SYSTEM CONTROLS	15.9
SOURCE DOCUMENT CONTROLS	15.9
INPUT CONTROLS	15.9
PROCESSING CONTROLS	15.10
GROUP CONTROLS	15.10
INDIVIDUAL RECORD CHECKING	15.10
AUDIT TRAIL	15.10
BACKUP FILE	15.10

### **KEY CONCEPTS (continued)**

	<u>PAGE NUMBER</u>
SYSTEM DEVELOPMENT	15.11
GANTT CHART	15.11
PROGRAMMING SPECIFICATIONS	15.11
PROGRAM DESIGN	15.12
UNIT TESTS	15.12
SYSTEM TESTING	15.12
DOCUMENTATION	15.12
CONVERSION	15.13
DIRECT CONVERSION	15.13
PARALLEL CONVERSION	15.13
SYSTEM MAINTENANCE	15.13

**PRACTICE TEST**

1. In the blanks below, name the three broad classifications of systems.

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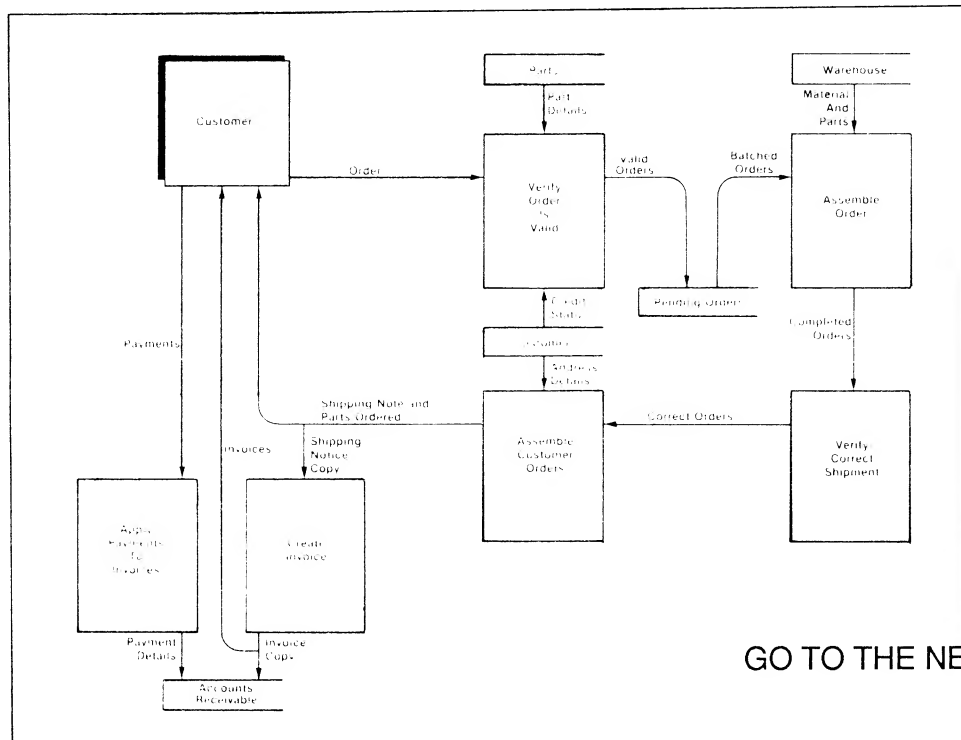


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2. The picture below illustrates a \_\_\_\_\_

- a) system flowchart.  
b) data flow diagram.  
c) Gantt chart.  
d) system design chart.

**VOL II  
259**



GO TO THE NEXT PAGE...

### **PRACTICE TEST (continued)**

3. A primary method of conducting a preliminary investigation is through:
  - a) the data flow diagram.
  - b) the systems assessment.
  - c) the prototype.
  - d) the personal interview.
  
4. Another name for a bar chart is:
  - a) a Gantt chart.
  - b) a flowchart.
  - c) a pie chart.
  - d) a line chart.

**GO TO THE END OF THIS STUDY GUIDE FOR ANSWERS**

## UNIT QUESTIONNAIRE

## LESSON 24A

You have just finished Lesson 24A.

Before taking this unit questionnaire, read the "Chapter Summary" on pages 15.14 and 15.15 in the textbook

## INSTRUCTIONS

- STEP 1 Take an answer card from the pocket at the back of the notebook.
- STEP 2 Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3 Take your unit questionnaire.

VOL II  
261

## QUESTIONS

1. An operational system:
  - a) refers to a computer-based system which generates timely and accurate information for various levels of management.
  - b) allows a manager or officer of a corporation to ask questions that can be answered in a dynamic manner based upon data stored in data bases.
  - c) is designed to process data that is generated by the day-to-day business transactions of a company.
  - d) allows business models and simulation exercises to occur.

GO TO THE NEXT PAGE...

### QUESTIONS (continued)

2. When initiating a system project, the systems manager will normally:
  - a) perform a detailed system investigation and analysis of each request.
  - b) evaluate each request and give it a priority.
  - c) immediately assign each request to a system analyst since the purpose of the systems department is to serve users.
  - d) forward all requests to top management for review before any action is taken.
  
3. Which one of the following is NOT a specific step undertaken to gather facts during the detailed system investigation and analysis phase?
  - a) Review the organizational chart of the structure of the company.
  - b) Conduct interviews with selected personnel.
  - c) Obtain actual copies of operating documents.
  - d) Analyze existing computer programs to determine if they must be modified.
  
4. The data flow diagram is used to:
  - a) define the flow of information from management to workers in an organization.
  - b) define the lines of communication in an organization.
  - c) graphically illustrate the flow of data through a system.
  - d) graphically illustrate the logic used in a program to arrive at a problem solution.

GO TO THE NEXT PAGE...



### QUESTIONS (continued)

5. When designing the system output:
- a) the output requirements and informational needs of a new system are defined jointly by the analyst and the user.
  - b) it is the responsibility of top management to tell the user the type of output that the user will receive from the new system.
  - c) it is the analyst's responsibility to inform the user of the type of output that can be produced since the analyst has more technical skill than the user.
  - d) it is the responsibility of the programmer to inform the user of the type of output that can be generated from a system.
6. A tool which is commonly used to illustrate the processing within a system is the:
- a) data flow diagram.
  - b) system flowchart.
  - c) program flowchart.
  - d) input-output chart.
7. Adequate controls must be established in a system to:
- a) ensure the accuracy of the processing.
  - b) prevent computer-related fraud.
  - c) reduce costs.
  - d) both a and b are correct.

### QUESTIONS (continued)

8. Processing controls refer to:
- a) procedures that are incorporated into computer programs within the system to assure the complete and accurate processing of the data throughout the system.
  - b) codes that are incorporated into the input data to assure the complete and accurate processing of the data.
  - c) procedures established to assure the complete and accurate conversion of data into a machine-readable form.
  - d) procedures established to assure that all source documents are processed completely and accurately.
9. A method often used to document a system development schedule is the:
- a) data flow diagram.
  - b) system flowchart.
  - c) Gantt chart.
  - d) system development bar chart.

GO TO THE NEXT PAGE...

## UNIT QUESTIONNAIRE

## LESSON 24A

### QUESTIONS (continued)

10. The process of programming the system includes the following activities:
- a) reviewing the program specifications, designing the program, coding the program, and implementing the system.
  - b) reviewing the program specifications, designing the program, coding the program, testing the program, and documenting the program.
  - c) designing the system flowchart, developing the program flowchart, coding the program, and testing the program.
  - d) coding the program, testing the program, evaluating the results, and documenting the program.

MAIL IN YOUR ANSWER CARD

GO TO UNIT 25, LESSON 25A

### OBJECTIVES

- Name three areas that have been affected by the increased use of personal computers in the home.
- Define the term computer record matching and identify the advantages and disadvantages of this technique.
- Identify and describe four basic fair information practices.
- Describe some of the ethical problems facing the information processing industry.

### TO COMPLETE LESSON 25A

VOL II  
266

- STEP 1      Read the major headings in the textbook, pages 18.1 through 18.12.
- STEP 2      Read pages 18.1 through 18.12 in the textbook.
- STEP 3      Review KEY CONCEPTS for Lesson 25A on the next page of this study guide.
- STEP 4      Take the PRACTICE TEST for Lesson 25A.
- STEP 5      Score the PRACTICE TEST for Lesson 25A.

### KEY CONCEPTS

#### PAGE NUMBER

COMPUTER LITERACY	18.2
ELECTRONIC COTTAGE	18.3
DATA BANK	18.6
COMPUTER RECORD MATCHING	18.8
FAIR INFORMATION PRACTICES	18.8
ELECTRONIC FUNDS TRANSFER (EFT)	18.8
COMPUTER CRIME	18.9
SOFTWARE PIRACY	18.9
HACKER	18.10
ETHICS OF INFORMATION PROCESSING	18.10, 18.11
ARTIFICIAL INTELLIGENCE	18.12

### PRACTICE TEST

1. Social Scientists have observed that the world is rapidly changing from an "industrial age" into a(n):
  - a) "data conscious age".
  - b) "neo-industrial age".
  - c) "information age".
  - d) "robotics age".
  
2. Name three general areas that have been affected by the increased use of personal computers in the home:
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_
  - c) \_\_\_\_\_

### PRACTICE TEST (continued)

3. Place a check mark next to the statements that represent basic fair information practices.
- ☐ Information collected and stored about individuals should be limited to the data necessary to carry out the function(s) of the business or government agency collecting the information.
  - ☐ Information collected and stored about individuals should consist of primarily information likely to be transferred from one company's files to another company's files.
  - ☐ After information has been collected, provisions must be made to restrict access to the information to only those employees who require access to perform their job duties.
  - ☐ Personal information may be released to an organization outside of the organization who originally collected the data only if the individual agrees to such a disclosure.
  - ☐ Information collected and stored about individuals that relates to the detection of fraud or violation of other laws must be secured from "hackers" using the Limited Access (LT) system.
  - ☐ When information is collected and stored about individuals, an individual should have an opportunity to verify the accuracy of the data collected.

You have just finished Lesson 25A.

### INSTRUCTIONS

- STEP 1      Take an questionnaire card from the pocket at the back of the notebook.
- STEP 2      Fill in your name, address, student number, date, and unit questionnaire you are taking.
- STEP 3      Take your questionnaire.

### QUESTIONS

1. It is predicted that by 1990, as many as \_\_\_\_\_ personal computers will be in use in the home, elementary schools, high schools, colleges and universities, and businesses.
  - a) 20 million
  - b) 30 million
  - c) 40 million
  - d) 50 million
  
2. Comparing data in two or more separate data bases is commonly referred to as:
  - a) data base matching
  - b) cross field matching
  - c) computer record matching
  - d) computer field matching.



### QUESTIONS (continued)

3. What is the amount estimated to be lost in computer-related crime activities each year in the United States?
  - a) \$10,000,000
  - b) \$50,000,000
  - c) \$100,000,000
  - d) \$500,000,000
  
4. The illegal duplication of software is known as:
  - a) software piracy.
  - b) software fraud.
  - c) hacking.
  - d) rekeying.
  
5. The first fully assembled personal computer appeared on the market in:
  - a) 1975.
  - b) 1977.
  - c) 1979.
  - d) 1981.

### QUESTIONS (continued)

6. Banks offering home banking to those customers with personal computers use a(n):
- a) Home Banking Network (HBN).
  - b) Financial Tracking Service (FTS).
  - c) Universal Access System (UAS).
  - d) Electronic Funds Transfer (EFT).
7. The term "electronic cottage" is used to describe the situation in which:
- a) most business activity is controlled by small, compact business organizations.
  - b) homes become the focal point for educational, entertainment, and business activities.
  - c) homes become equipped with computerized environmental controls.
  - d) computer components are assembled in small, compact business organizations.

### QUESTIONS (continued)

8. An individual who routinely uses remote computer terminals and communications lines to gain unauthorized access to restricted data bases is called a(n):
- a) electronic spy.
  - b) electronic pirate.
  - c) hacker.
  - d) user.
9. In the early 1970's, when data bases were becoming more widely used, it was proposed that:
- a) a national data bank be developed.
  - b) each state develop its own data bank.
  - c) legislation be passed to ban data banks.
  - d) data banks only be used to track criminals.
10. The information revolution has prompted a shift from:
- a) mental labor to physical labor.
  - b) creative tasks to physical tasks.
  - c) stressful tasks to creative tasks.
  - d) physical labor to mental labor.

MAIL IN YOUR ANSWER CARD

YOU HAVE COMPLETED ALL UNITS







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**VOL. I**

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**VOL. II**